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Not Just a Hospital Ship

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Surgeon General of the Navy
Chief, BUMED
VADM Adam M. Robinson, Jr., MC

Deputy Surgeon General
Deputy Chief, BUMED
RADM Thomas R. Cullison, MC

Editor-in-Chief
Jan Kenneth Herman

Managing Editor
Janice Marie Hores

Staff Writer
André B. Sobocinski

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Letters to the Editor are welcome. Let us know what you think about *Navy Medicine*. Please send letters to: Janice Marie Hores, Managing Editor, Bureau of Medicine and Surgery (M09B7C), 2300 E Street, NW, Washington, DC, 20372-5300 or Janice.Hores@med.navy.mil or 19native47@verizon.net

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Last fall, USNS *Comfort* (T-AH 20) steamed to the Caribbean and Central America on its 2007 Partnership for the Americas cruise. Story on page 23. Photo by MC2 Joshua Karsten, USN

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Navy Medicine is also looking for book reviews. If you've read a good book dealing with military (Navy) medicine and would like to write a review, the guidelines are:

- Book reviews should be 600 words or less.
- Introductory paragraph must contain: Book name by author. Publisher, city, state. Year published. Number of pages.
- Reviewer ID: sample: CAPT XYZ is Head of Internal Medicine at Naval Medical Center San Diego.

I look forward to hearing from you.

SAVE A TREE

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Janice Marie Hores, Managing Editor, at
Janice.Hores@med.navy.mil or
19native47@verizon.net

Admiral's Call

The Surgeon General's opening remarks at the recent Military Health System (MHS) Conference

It is truly an honor to address the MHS, a world-class medical organization uniquely structured and committed to global/expeditionary medical support for operational forces in the 21st century...providing diversified maritime medical care at sea, in the air, and on land. This care is tailored to peacetime, diplomatic, operational requirements, and sustaining the health of all those entrusted to our care. This, ladies and gentlemen, is force health protection operationalized.

I just returned from a trip to Iraq with Dr. Casscells. Among many stops, we attended a conference held in Baghdad organized by the Iraqi Minister of Health. It was the first national healthcare conference in Iraq in over 25 years.

This meeting was significant. I hope that it portends a real and lasting change in healthcare delivery in Iraq. Our primary goal was to support the Iraqi people and their medical providers in order to make basic medical and dental care available to the millions of Iraqi people in need.

The 200-plus Iraqi physicians and healthcare providers who attended the conference were energized and committed to bring about the changes necessary to promote quality healthcare in Iraq. I am delighted in the fact that I and scores of other international health partners will have a supportive part in this new Iraqi healthcare system. This is expeditionary medicine operationalized—expeditionary medicine at work.

This was my first trip to Iraq but my second trip to the CENTCOM AOR in the last month. In December, I traveled to Bahrain, Kuwait, and Landstuhl to see how Navy medicine is partnering with our Army and Air Force colleagues in providing medical and surgical care to our troops and to thank our men and women for their service, their sacrifice, and their commitment to force health protection.

What I found in Bahrain, Headquarters for U.S. Naval Forces Central Command (NAVCENT)—the Naval component commander to CENTCOM—is that Navy medicine is playing a significant role in support of maritime security operations (MSO) for U.S. and coalition forces in the NAVCENT area of operation (which includes the Arabian Gulf, parts of the Indian Ocean, the Red Sea, and the Sea of Aden). From providing expanded medical care afloat during maritime interdiction operations (MIO) in support of anti-piracy operations in the Horn of Africa to providing comprehensive medical care in an isolated and arduous environment onboard Iraq oil platforms, Navy medicine is deeply embedded in all operations supporting NAVCENT's role in preserving the free and secure use of

the world's oceans by legitimate mariners and in defeating transnational terrorists.

Last October, Chief of Naval Operations, ADM Roughead, Commandant of the Marine Corps, GEN Conway, and Commandant of the Coast Guard, ADM Allen, unveiled the new 21st century maritime strategy. This strategy includes a new dimension and concept "soft power"—non-kinetic force power projection. This new strategic imperative has been added to the more conventional ones that include terrorism deterrence, control of our shores and sea lanes, and our traditional kinetic power projection and protection.

Humanitarian assistance and disaster relief (HA/DR) operations are examples of this "soft power."

This "soft power" can be delivered not just by traditional hospital ships like USNS *Comfort* (T-AH 20), but also by the traditional ships of war such as USS *Peleliu* (LHA-5) (Pacific Partnership 2007), and USS *Kearsarge* (LHD-3) (Bangladesh relief, Nov 2007)—examples of the expanded role of Navy medicine in humanitarian assistance/disaster relief missions worldwide.

During its 2007 Partnership for the Americas cruise, *Comfort* conducted nearly 1,200 surgeries and treated more than 98,000 patients, averaging 1,200 patients a day.

Likewise, *Peleliu* modeled her deployment on USNS *Mercy's* highly successful 2006 Southeast Asia and WEST-PAC deployment, delivering substantial medical and dental support to a significant number of people in remote locations and demonstrating the large deck amphibious assault ship's commitment, flexibility, and multi-purpose capability.

I can tell you firsthand that nothing has more impact in people's lives than providing them with comprehensive and compassionate medical and dental care.

In mid November, Cyclone Sidr struck Bangladesh killing more than 3,500 people and leaving several hundred thousand homeless. *Kearsarge* with 16 heavy-lift helicopters and the 22nd Marine Expeditionary Unit embarked, arriving off the coast of Bangladesh on Thanksgiving day.

Members of the United States Agency for International Development (USAID) as well as senior members from the Bangladeshi government flew out to the ship to discuss how they could best support ongoing disaster relief efforts.

Over the next few weeks, *Kearsarge* and the 22nd MEU delivered more than 160,000 pounds of relief supplies which included food, blankets, clothing, water purification tablets, and medical supplies to 30 locations identi-



fied by the government of Bangladesh. This is expeditionary medical care working today.

Medical care is not the only service we provided. Our medical personnel worked hand-in-hand with the Seabees who built schools, repaired clinics, and delivered fresh water (*Comfort* conducted nearly 30 infrastructure projects at a total value of \$400,000) as well as non-governmental organizations (NGOs) such as Project Hope who donated \$3.4 million in vaccines, medical supplies, and books and Operation Smile which performed over 100 cleft lip/palate surgeries.

The crew of both ships worked hand-in-hand with their host nation counterparts not only in providing medical and dental care, but also providing training to local providers expanding local capacity and care capabilities.

Together the crew played a critical role as goodwill ambassadors, demonstrating that beyond the kinetic energy of a mighty warship like *Peleliu* lies the equally compelling compassionate non-kinetic force power projection of HA/DR.

One of the advantages of these HA/DR missions is that they provide us an opportunity to “train as we fight” should we need to provide disaster relief from these same platforms. We have learned a lot over the past several years with the tsunami, the earthquake in Indonesia, and Katrina in the United States. We are collecting our “lessons learned” and by assessing our measures of effectiveness in HA/DR operations, we are becoming more capable to perform our next mission. And we expect more missions.

As I mentioned, in December I visited Kuwait to see firsthand the service and sacrifice of our medical professionals in theater. EMF Kuwait is a Level III medical facility comprised of 370 Navy personnel from 30 different CONUS/OCONUS MTFs. They have a productivity output which [more than] meets our medical/dental requirements. They are true professionals doing a superb job.

For the last 3 years, over 75 percent of the troops who are admitted to EMF-K were able to remain in theater. The quality of care provided by EMF-K is outstanding and the Army has been overwhelmingly complimentary of Navy medicine’s service in providing comprehensive, state-of-the-art medical and dental care for USARCENT, the Army Component Command for CENTCOM.

We are thankful to our providers like cardiologist, LCDR Gautam Nayak whose experiences in the desert are truly comprehensive and diverse.

My tour of Navy medicine in the field followed a similar path to the one taken by the wounded. On 7 December we flew to Landstuhl, Germany to visit the Navy Expeditionary Medical Unit (NEMU) and the Deployed Warrior Medical Management Center (DWMMC) to see how Navy medicine continues to accommodate the seriously wounded service members who are airlifted regularly from the battlefields of Iraq and Afghanistan.

Similar in size to EMF-K, the Deployed Warrior Medical Management Center is staffed by 360 Navy personnel mostly reservists, demonstrating that we are, in fact, ONE-Navy medical team.

My naval medical professionals at DWMMC are doing a superb job serving our wounded and I’m happy to note that approximately 40 percent of those admitted to Landstuhl return to duty shortly after their stay.

Last year the Navy opened a new facility called the Comprehensive Combat and Complex Casualty Care (C5) facility in San Diego that manages the care of the severely injured or ill patient from medical evacuation through inpatient care, outpatient rehabilitation, and eventual return to active duty or transition from the military. The program provides patients and families with an all-encompassing treatment and services for physical injuries, mental health, and rehab.

C5 is strategically important in the Navy’s concept of family-centered care because approximately 25 percent of all combat casualties call the West Coast home, many being stationed in Camp Pendleton just 40 miles north of San Diego. Patients can be brought directly to San Diego from Landstuhl or shortly after initial treatment at the National Naval Medical Center in Bethesda or Walter Reed Army Medical Center, allowing families to be closer together and obtain access to essential support services which improves the total healing process. These warriors deserve our best, and it is our calling and duty to give them the best medical care and rehabilitation support possible.

When wounded warriors are admitted to our MTFs, they are assigned to a multi-disciplinary care team that is comprised of physicians, nurses, case managers, social workers, chaplains, physical and occupational therapists as well as all the ancillary personnel. The entire team meets three times a week and goes over each and every patient, providing them and their families with all the administrative, clinical, spiritual, and social avenues at their fingertips.

We also empower our staff to do whatever it takes to deliver the highest quality, compassionate, and responsive healthcare centered around the patients’ and families’ needs and well-being. By listening to and understanding the unique and individual needs of all concerned, Navy medicine creates a personalized and family-oriented plan. This patient-family centered approach, coupled with the insight gained from the providers, ensures the highest quality of healthcare. This is not only our mission; it is the bedrock of our medical system.

Navy medicine has also been exploring new relationships with the Veterans Administration such as the VA Seamless Transition Program to address the logistical and administrative barriers for active duty service members transitioning from military to VA-centered care at Navy military treatment facilities from coast to coast.



SG sending “get well” wishes to patients at Balad Air Force Theater Hospital (hub for enroute patient care). Photo by CDR Chris Irwin

Our staff ensures a close and coordinated physician-to-physician hand-off of our wounded warriors, ensuring that their care needs are always met. We also ensure a full electronic transfer of the entire medical record and radiological images as well as ensuring the families are both informed and involved, a demonstration of patient-family-centered care in action.

Last September, I visited Great Lakes, IL, for the naming ceremony of the CAPT James A. Lovell Federal Health Care Center, the nation’s first joint Veterans Administration (VA)—Navy hospital scheduled to open in 2010. The Lovell Center will serve an estimated 100,000 veterans, active duty personnel, and family members and has already established collaborative processes, which can be exported to other locations and in turn shape the future of federal healthcare.

Great Lakes is absolutely critical to Navy medicine because the Recruit Training Center serves as our main personnel pipeline to the fleet. The average age of a Navy recruit is 18, but last year we had one doctor over 40 years older, who took an oath to serve his country. Dr. Bill Krissoff, an orthopedic surgeon, was commissioned as a Navy Reserve Medical Corps officer in November 2007.

When Marines came to his door a year ago to inform Dr. Krissoff that his eldest son, 1st LT Nathan Krissoff, had been killed in Iraq, Bill Krissoff was devastated. Instead of collapsing in despair, Dr. Krissoff decided to honor his son and to help the Marines.

Dr. Krissoff brings with him the critical skills and extensive experience that are in such great need at this time. His decision to serve as a doctor in the Navy Medical Corps is a reflection of his deep commitment to our men and women in uniform and is a tribute to the sacrifices his son made for our country. We look forward to his valuable service with the Navy-Marine Corps team.


Dr. Krissoff’s decision to serve should inspire our leaders within and outside the military to challenge all Ameri-

cans to come forward to help our nation. Service is not just military. It is volunteering to serve their neighbors and their nation for an important cause. It takes the shoulders of every man and woman in America working together and working under the same moral and ethical value system that our democracy was built on, with our Constitution in mind, to ensure that we continue to strengthen our country by helping others.

As I have seen firsthand during my forward-deployed travels, Navy medicine is supporting the war in every aspect: sustaining the war effort, supporting the war fighter, taking care of their psychological needs, and caring for the wounded at every level, from the mobile and immediate forward resuscitative surgical system (FRSS) on the battlefield to the Level IV trauma center (LRMC) and finally at home, to the National Naval Medical Center in Bethesda or Naval Medical Center in San Diego.

As Surgeon General of the Navy, I have the ultimate responsibility for ensuring medical readiness with the right force with the right balance. I have to ensure Navy medicine forces are prepared, trained, and deployed with the right capabilities so we can fully support our warriors, no matter who they are, no matter what the mission might be. I will look critically at our force in terms of numbers, specialties, and level of care and ensure Navy medicine can support the Force Health Protection mission, the warrior care mission, and maintain alignment with the overall Navy mission such as the 21st century maritime strategy to provide first-class medical care worldwide.

That is why I serve my country and that is why I am proud and honored to lead Navy medicine. We are indeed the world’s finest maritime medical organization. We take pride in the fact that we provide for the Force Health Protection of our Navy and Marine Corps fighters as they provide the safety, security, and prosperity of our nation. We must remain focused on our most important missions—readiness and people.

Thank you for your time and attention. I look forward to working with you throughout the year as we look at ways we can enhance our deployable medical capability, force medical readiness, humanitarian assistance and disaster relief, and sustain the military health benefit through top quality patient and family-centered care and long-term patient partnerships. 

MHS Award Winners

The Military Health System recognized individuals and medical facilities for various achievements during the 2008 Military Health System (MHS) conference held January 28–31, 2008. The following is a listing of award recipients:

Excellence in Customer Satisfaction (CONUS)

Small Medical Facility—47th Medical Group—Laughlin AFB, TX

Medium Medical Facility—Keller Army Community Hospital, West Point, NY

Large Medical Facility—Walter Reed Army Medical Center, Washington, DC

Excellence in Customer Satisfaction (OCONUS)

U.S. Naval Hospital Naples, Italy

Obstetrics Care Satisfaction (CONUS)

David Grant USAF Medical Center, Travis AFB, CA

Obstetrics Care Satisfaction (OCONUS)

U.S. Naval Hospital Yokosuka, Japan

Excellence in Inpatient Satisfaction

Irwin Army Community Hospital—Fort Riley, KS

Excellence in Pharmacy Operations

Air Force

88th Medical Group Pharmacy – Wright-Patterson AFB, OH

47th Medical Group Pharmacy—McLaughlin AFB, TX

Army

Brook Army Medical Center Pharmacy—Fort Sam Houston, TX

Rader Army Health Clinic Pharmacy—Fort Myer, VA

Navy

U.S. Naval Hospital Corpus Christi, TX

U.S. Naval Hospital Lemoore, CA

Coast Guard

Rockmore-King Medical Center—Integrated Support Command, Kodiak, AK

Health Services Clinic, Staten Island, NY

Excellence in Health Innovations Programs

Access

U.S. Naval Medical Center, San Diego, CA

Cost

U.S. Naval Hospital Pensacola, FL

Healthy Lifestyles

Soar Into Shape Program—Elmendorf AFB, AK

Effective Patient Partnerships

Carl R. Darnell Army Medical Center, Fort Hood, TX

Quality

Carl R. Darnell Army Medical Center, Fort Hood, TX

Readiness

Hickam AFB, HI

Excellence in Patient Safety Programs

Team Performance

59th Medical Wing—Wilford Hall Medical Center, San Antonio, TX

Use of Technology

49th Medical Group—Holloman AFB, NM

Use of Technology—Hospital

Madigan Army Medical Center, Fort Lewis, WA

Systems Improvement

22nd Medical Group, McConnell AFB, KS

Systems Improvement—Hospital

U.S. Naval Hospital Sigonella, Italy

Community Service Volunteer of the Year

Don E. Siegal, U.S. Naval Hospital Lemoore, CA

Community Service Hospital of the Year

U.S. Naval Hospital Corpus Christi, TX

Electronic Health Record Innovators Award

Irwin Army Community Hospital—Fort Riley, KS

Office of the CFO Awards

Facility

U.S. Naval Hospital Guam

Individual

Ms. Kathy Dulaney—US Naval Hospital Bremerton, WA

TRICARE Awards

Best TRICARE Regional Office

TRO-North

Best TRICARE Area Office

Latin America

Canada

USUHS Excellence in Teaching

Wright-Patterson Medical Center, OH

Madigan Army Medical Center

Excellence in Deployment Nursing

MAJ Stacy Weina, USA, NC

Excellence in Nursing Research

COL Richard Ricciardi, USA, NC

Nursing Research Lifetime Achievement

COL Stacy Young, McCaughan, USA, NC

MHS Healing Environment Competition

U.S. Naval Medical Center San Diego, C5 Rehabilitation Facility

MHS Motto Competition

“Caring for the best”—Submitted by LCOL Michael Rossman, Army Medical Activity Heidelberg

MHS Logo Competition

Submitted by COL Randall Anderson, Military Vaccine Agency

Hospital Ship to Conduct Pacific Partnership 2008

Preparations are under way to deploy USNS *Mercy* (T-AH 19) on a humanitarian mission to the Western Pacific and Southeast Asia in support of Pacific Partnership 2008.

“Building on a successful *Mercy* deployment in 2006 and [USS *Peleliu* (LHA-5)] Pacific Partnership last summer, *Mercy* will again embark international medical, dental, and engineering teams this summer to provide humanitarian support in Southeast Asia,” commander of the Pacific Fleet, ADM Robert F. Willard said in a speech on U.S. Maritime Strategy.

“A Cooperative Strategy for the 21st century seapower,” was delivered at the Royal Australian Navy Sea Power Conference 2008. Willard said that by sending this uniquely capable ship is one way to demonstrate our commitment to the Asia-Pacific region and to work together with our friends and partners.


The deployment is being coordinated with several nations and will be carried out in conjunction with non-governmental relief organizations. A number of military and civilian agencies are planning the myriad details that go into a months-long mission of focused medical, dental, and civic-action programs to provide humanitarian assistance to nations in the Asia-Pacific region. Specific locations for the ship’s relief operations will be announced at a later date.

Mercy is uniquely capable of supporting medical and humanitarian assistance needs and can rapidly respond to a range of situations on short notice. In 2006, *Mercy* performed a similar mission in Southeast Asia. That deployment resulted in the treatment of almost 200,000 patients in the Philippines, Indonesia, and Bangladesh.

In 2007, *Peleliu*, an amphibious ship, conducted a 4-month humanitarian mission, visiting the Philippines, Vietnam, Solomon Islands, Papua New Guinea, and the Republic of the Marshall Islands, and providing a variety of medical, dental, educational, and preventive medicine services to more than 31,600 patients.

These humanitarian missions build international relationships and represent a core task in this “Cooperative Strategy for 21st Century Seapower.” With missions such as Pacific Partnership, the Navy seeks to mitigate human suffering, both in a deliberate, proactive fashion and in response to crises.

For this deployment, *Mercy* is being configured with special medical equipment and a robust medical team of uniformed and civilian healthcare providers to provide a range of services ashore as well as on board the ship.

The ship can support services such as casualty reception, optometry, physical therapy, burn care, and radiological, laboratory, and dental services. 

—U.S. Pacific Fleet Public Affairs, Pearl Harbor, HI.

Measures to Prevent Profiles in Combat Support Commands

Service members on duty-limiting medical profiles offer reduced benefit to commands that provide logistical support to operations in Iraq. Medical limitations that prevent a service member from wearing body armor or driving equates to fewer troops left to perform a steady workload. For units already undermanned, medical issues can thus compromise mission success. In the period between March and August 2007, shoulder and back pain complaints among soldiers of the 377th Theater Support Command were numerous. Despite rest, many complaints became chronic due to the physical demands of the environment and required physical therapy. Recognizing this trend of injury, preventive measures were identified within the command to reduce physical therapy visits and avoid lost work hours.

Shoulder Pain and Individual Body Armor

Prolonged wear of the Interceptor Body Armor Outer Tactical Vest (OTV) is frequently blamed for common complaints of neck and shoulder pain. Thirty percent of visits referred to physical therapy at Camp Arifjan in March 2007 related to increased pain with OTV wear. This model is currently being replaced in direct combat roles with a newer model known as the Modular Tactical Vest (MTV), but it is still issued to active duty members in ancillary roles, such as supply transport, and training commands.

The OTV is intended to be worn tightly around the torso to protect core organs from some types of small projectiles. The vest, with two Small Arms Protective Inserts (SAPI), weighs approximately 17 pounds. The additional burden of side, shoulder, groin, throat, and neck pieces, plus the Enhanced Tactical Load-Carrying Vest (ETLCV) and Individual Equipment Belt (IEB), can result in a total system weight in excess of 60 lbs.

When worn tightly on the torso with minimal shoulder contact, the IBA attempts to distribute its weight along the surface area of the rib cage. If the vest is not adjusted correctly, the tactical load rests directly and disproportionately on the smaller surface area of the shoulders. Over a prolonged period of time, the weight of the system pushing down on the upper extremities can fatigue muscles, compress nerves, impinge the shoulder rotator cuff, reduce available range of the motion, and cause pain. Even if improved after period of light duty and shoulder rehabilitation, many com-

plaints of pain recurred with return to OTV wear as the shoulder resumed its role as the focal point of weight distribution.

During physical therapy evaluation, patients who donned a basic OTV under supervision demonstrated a distinctive pattern of wear that included (1) failure to initially release the side straps to assist with front Velcro alignment, (2) adjusting the neckline flaps around the angle of the chin when looking down at the vest and not straight ahead, and (3) failure to adjust the vest off the shoulders and tightly against the rib cage. These three factors lead to misalignment of the neckline and reduced weight borne on the rib cage. Weight resting on the shoulders inhibited natural biomechanics of the upper extremity and exacerbated complaints of pain.

When the OTV was readjusted onto the rib cage by the physical therapist, patient complaints of shoulder and neck pain generally decreased. To achieve this relief independently, soldiers were instructed to (1) loosen the side straps each time the vest was put on, (2) look up to clear the chin when aligning the neckline, (3) lift the OTV off the shoulders with the thumbs, and (4) have a partner tighten the OTV against the rib cage.

In addition to one-on-one patient contact to review this technique, it was also presented during a safety brief for the 337th Theater Support Command to company leaders. As a result of these proactive and preventive measures, physical therapy consults for neck and shoulder pain significantly decreased over a 4-month period. Clinical research has been proposed to study the effect of formal instruction for safe OTV donning techniques on the frequency of shoulder and neck pain in Marine Corps training units at Camp Pendleton.

Back Pain and Prolonged Compromised Posture in Vehicles

Complaints of low back pain among service members made up another 30 percent of the physical therapy visits at Camp Arifjan, Kuwait. Although administrative workers reported such pain, the majority of patients were truck drivers who ran frequent missions into Iraq. These service members reported increased low back pain with prolonged sitting, difficulty returning to a standing position, buttock pain, and sometimes numbness and tingling into the legs. Conservative treatment included limited duty in order to modify activity and lessen symptoms. Extended periods of light duty reduced the number of available drivers and became a concern for company commanders.

Mechanical back pain during prolonged sitting typically occurs when the natural curve of the lower, or lumbar, spine is reduced. In a normal spine, the natural curvature distributes a balanced load upon the pliable lumbar discs which expand and compress in response to force. With compromised posture, the lumbar curvature is reduced and the angle of force upon the discs is altered. The discs are unable to dis-



Correctly fitting OTV: All straps aligned, neckline aligned. Photo by LTJG Sarah D. Thomas, USN

perse force and are often pushed themselves in the direction of nerves in the low back. Compounded by increased force from body armor, mechanical vibration, and shock absorption from unpaved roads, the resulting long term pressure on these nerves causes chronic low back pain.

With assistance from the 336th Transportation Group Safety Officer, MAJ Kurt Zacharias, several vehicles utilized were examined for postural supports, including the HET, M915, 5-Ton, and M1114. Several key factors were determined to contribute to low back pain: (1) poor relationship between hip and knee height of the driver, (2) decreased seat height, (3) reduced curvature of the lumbar spine, and (4) excessively reclined back rest. Once these factors were corrected, drivers typically reported decreased low back pain symptoms.

The relationship between hip and knee height in a seated position often determines the presence of a natural curve in the low back. When the hips are equal in height to the knees, the curvature of the low back is reduced and the soldier experiences a "slouch" in the low back. This can occur when the driver seat is adjusted too low. A good example is the rear seat of an M114, where the low seat combined with the lack of leg room results in the knees resting well above the hips. The curvature of the back in this extreme position is relatively non-existent. Excessive pressure is placed on the discs of the lumbar spine. Thus, soldiers typically experience pain after prolonged periods of riding. The seat height should not be lower than the height of the lower leg of the driver.

The lumbar curvature and the capability of the spine to efficiently absorb force are restored when the knees fall below the hips in the seated position. This can sometimes be achieved with adjusting the height of the seat when there is available head room. It is most successfully achieved in combination with a forward angulation of the seat rest so that the thighs are fully supported and slanting 5-15 degrees below the horizontal. In vehicles such as the newer model 5-ton in which the seat rest adjusts downward, the seat was adjusted so that the knees rested below the height of the hips and a

curve was evident in the low back. This supported position allows for the spine to most efficiently absorb the shock of the road. On verbal interview, drivers noted less back pain in this position.

Currently, DOD seat standards for acquisition and procurement of vehicles do not specify standards for seat rest adjustment below the horizontal. For this reason, many seat rests, such as those for the HET, M1114, and M915 do not adjust at all. For soldiers in these vehicles, suggestions to achieve a relative curve in the low back included sitting on a pillow or seat wedge that creates such an angle. Based on this information, MAJ Zacharias and the Department of Defense Safety Office began working with SKYDEX to bring a universal product to the market to achieve such a goal in these vehicles.

Finally, corrections to the seat rest angle were only effective when the back rest was between 95-100 degrees from the horizontal. Excessive reclining of the back rest, in addition to the forward reaching of the driver to reach hand controls, reduced more of the lumbar curve and increased pressure experienced in the spine. Adjustments to a back rest to a fully upright position, 90 degrees from the horizontal, did not fully accommodate for the bulk of the OTV. In this case the driver would pitch forward. Typically 95-100 degrees for back rest inclination above the horizontal, combined with the seat rest 5-15 degrees below the horizontal was an anatomically comfortable position that did not exacerbate pain.

Identifying the occupational trend of low back pain at the battalion level resulted in proactive measures to improve prolonged sitting posture and to return soldiers to duty. For this reason, it is recommended that the DOD consider revisiting standards for seat design and include a measure that addresses angulation or adjustment of the seat to rest 5-15 degrees below the horizontal. In order to keep drivers who spend 10-12 hours on the road at one time off of light duty, consideration of posture is necessary in the prevention of low back pain.✍

—Story by LTJG Sarah D. Thomas, Division Officer, Physical Therapy Department and Sports Medicine and Reconditioning Team (SMART) Clinic, Camp Pendleton, CA.

RTQ Thimerosal

Influenza can be a severe to life-threatening disease. Getting an annual influenza vaccine protects many people from getting the disease or becoming severely ill from it. A variety of influenza vaccine formulations are available, each with specific indications and varying package insert guidance. There are two general types of influenza vaccine, the inactivated (killed virus) injectable vaccine and the newer, attenuated (weakened virus) nasal spray vaccine. There are

several formulations of the injectable vaccine with some available in limited quantities. The DOD uses a mix of types and formulations of vaccines to protect DOD healthcare beneficiaries from influenza.

There has been a concern that too much exposure to mercury (even at the small level contained as a preservative in some immunizations) was harmful to children. In response to public concern over the use of thimerosal, a preservative, in some influenza vaccine formulations, several states (California, Washington, Delaware, Iowa, Missouri, New York, and Illinois) have passed laws restricting or banning the use of vaccines that contained thimerosal (49 percent ethylmercury) as a preservative in children younger than 3-8 years old and in women known to be pregnant. Because of this, manufacturers have started to make many/most childhood vaccines without thimerosal, but many influenza vaccines still contain it.

Scientific evidence does not support an increased risk from exposure to thimerosal-preserved vaccines in these populations. In fact, the CDC and Advisory Committee on Immunization Practices (ACIP) recommend pregnant women receive an inactivated influenza vaccine including those that are thimerosal preserved, as pregnant women have significant risk of severe consequences from an influenza infection. However, because public concerns over thimerosal might be a barrier to vaccination, CDC, ACIP and other federal agencies and professional medical organizations continue to support efforts to provide thimerosal preservative—free vaccine options. Further details are available at www.cdc.gov/flu/about/qa/thimerosal.htm

While state laws technically do not apply on a federal installation, it is the general policy of DOD and Navy medicine to follow state laws regarding medical practice when practical. In this instance, due to the emerging nature of new state laws and the fact that the federal supply system still stocks all of the vaccines, Navy medicine wants to prevent the inadvertent administration of thimerosal-preserved influenza vaccine to pregnant women and children younger than 3 years in states with laws restricting or banning such administration. Consequently, all Navy medicine regions have been directed to:

- 1) Discontinue using thimerosal-preserved influenza vaccine in pregnant women and children younger than 3 years, in those states with applicable laws (New York law went into effect 1 January 2008; Illinois law is currently in abeyance)
- 2) Redistribute vaccine stocks to ensure sufficient supplies of thimerosal-free vaccine are available to continue immunizing pregnant women and children younger than 3 years
- 3) Identify and notify any pregnant women and guardians of children younger than 3 years who have received thimerosal-preserved influenza vaccine in those states with applicable laws
- 4) Ensure all immunization programs are administered to the maximum extent as practical in accordance with state laws.

Q&A

Q: What is thimerosal?

A: Thimerosal is a mercury-containing preservative used to prevent bacterial and fungal contamination in a number of drug products, including some types of vaccines. Thimerosal has been used historically in such applications since the 1930s. It is typically used as a preservative in vaccines that are issued in multi-dose vials. It is added at the end of the production process to prevent potential contamination from occurring from repeated punctures to multi-dose vials. Thimerosal has a long record of safe and effective use preventing bacterial and fungal contamination of vaccines with no ill effects established other than minor local reactions at the site of injection.

Thimerosal contains mercury. Certain forms of mercury (particularly methylmercury) are of concern as they can concentrate and accumulate over time in humans and cause potential health effects. Although the type of mercury found in thimerosal (ethylmercury) is less likely to accumulate in the body, some scientists were still concerned that children could be receiving too much mercury from multiple, routine vaccinations.

Q: What are preservatives and why are they added to vaccines?

A: Preservatives are compounds that kill or prevent the growth of microorganisms, such as bacteria or fungi. They are used in vaccines for over 70 years to prevent bacterial or fungal growth in the event that the vaccine is accidentally contaminated, as might occur with repeated puncture of multi-dose vials. Vaccines, both in the United States and throughout other parts of the world, are commonly packaged in multi-dose vials. In some cases, preservatives are added during manufacture to prevent microbial growth; with changes in manufacturing technology, however, the need to add preservatives during the manufacturing process has decreased markedly.

Q: Do all vaccines contain thimerosal?

A: Although thimerosal has been used historically in many common vaccines, there has been a recent push to reduce or eliminate its use as a preservative in such applications. As a result, there are many newly formulated vaccines that are “thimerosal-free” or “thimerosal-reduced” (especially for sensitive populations such as young children and pregnant women). Today, with the exception of some flu vaccines, none of the vaccines used in the U.S. to protect preschool children against 12 major infectious diseases contain thimerosal as a preservative.

Q: Why are some vaccines noted to be “thimerosal-free” while some are “thimerosal-reduced”? What is the difference between “thimerosal-free” and “preservative-free”?

A: The term “preservative-free” indicates that no preservative (thimerosal or otherwise) is used in the vaccine; however, traces used during the manufacturing process may be present

in the final product. Similarly, the term “thimerosal-reduced” indicates that thimerosal is not added as a vaccine preservative, but trace amounts may remain from the manufacturing process. Scientists do not consider the trace amounts to be a concern and they do not result in exposure exceeding any federal guideline for mercury exposure. Vaccines may be termed “thimerosal-free” if no thimerosal can be measured; i.e., thimerosal content is below the limit of detection.

Q: Why is exposure to mercury a concern?

A: The preservative thimerosal contains mercury. Mercury is chemical element that is widely dispersed around the earth. Certain forms of mercury (particularly methylmercury) are of concern as they can concentrate and accumulate over time in humans and may cause adverse health effects. Although the type of mercury found in thimerosal (ethylmercury) is less likely to accumulate in the humans than other forms, some scientists were still concerned that children could be receiving too much mercury from multiple, routine vaccinations.

Because of this concern, the FDA conducted a comprehensive review of the use of thimerosal in childhood vaccines in 1999. This review found no evidence of harm from the use of thimerosal as a vaccine preservative, other than local redness or swelling at the site of the injection. However, the Public Health Service (PHS) agencies, the American Academy of Pediatrics (AAP) and vaccine manufacturers agreed that thimerosal should be reduced or eliminated from vaccines as a precautionary measure.

Q: What progress has been made towards the goal of eliminating thimerosal from vaccines?

A: Progress continues to be made in removing thimerosal from vaccines. Manufacturers have been able to accomplish this by changing their processes and switching from multi-dose vials (which generally require a preservative) to single-dose vials or syringes. Except for some types of flu vaccine, all vaccines manufactured for the U.S. market and routinely recommended for young children have contained no thimerosal (or only trace amounts) since 2001.

With the increased production of thimerosal-free vaccines, the potential exposure to mercury from childhood vaccines continues to be reduced significantly. Furthermore, all new vaccines licensed since 1999 are thimerosal-free. Although the amount of thimerosal-free flu vaccine is still below the total number of doses needed, the FDA continues to work with manufacturers to increase supply and capacity for future years.

Q: Is it safe for children to receive an influenza vaccine that contains thimerosal?

A: Yes. The Food and Drug Administration (FDA) continuously monitors the safety of these vaccines. Except for minor reactions such as redness and swelling at the injection site, there is no scientific evidence of any harm caused by the low doses of thimerosal found in vaccines.

Because young children are at increased risk for influenza-related complications, maintaining a safe and effective vaccination program (including using approved, available vaccines preserved with thimerosal) is a critical component of the Navy/Marine Corps long-term health care strategy.

Q: Is it safe for pregnant women to receive an influenza vaccine that contains thimerosal?

A: Yes. The Food and Drug Administration (FDA) continuously monitors the safety of these vaccines. Except for minor reactions such as redness and swelling at the injection site, there is no scientific evidence of any harm caused by the low doses of thimerosal found in vaccines.

Because pregnant women are at increased risk for influenza-related complications, maintaining a safe and effective vaccination program (including using approved, available vaccines preserved with thimerosal) is a critical component of the Navy/Marine Corps long-term health care strategy.

Q: Thimerosal is no longer used as a preservative in vaccines routinely recommended for children 6 years or less of age, with the exception of influenza vaccine. What is being done about the thimerosal content of other vaccines and other biological products given to infants, children, and pregnant women?

A: FDA continues to make progress in removing thimerosal from vaccines. Manufacturers have been able to accomplish this by changing their processes and switching from multi-dose vials (which generally require a preservative) to single-dose vials or syringes. Except for some types of flu vaccine, all vaccines manufactured for the U.S. market and routinely recommended for young children have contained no thimerosal (or only trace amounts) since 2001. FDA is in discussions with manufacturers of influenza vaccine regarding their capacity to further increase the supply of preservative-free formulations.

Currently, all hepatitis vaccines manufactured for the U.S. market contain either no thimerosal or only trace amounts. Other common vaccines--Tetanus and Diphtheria toxoid (Td) and Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine Adsorbed (Tdap) - are now available in thimerosal-free formulations. In addition, all vaccines licensed since 1999 with the exception of inactivated influenza vaccine have not contained thimerosal as a preservative.

Q: What is the Navy/Marine Corps doing about this issue?

A: To maintain compliance with state and federal guidelines, all Navy medicine regions have been directed to:

- Discontinue using thimerosal-preserved flu vaccine in pregnant women and children younger than 3 years in states with applicable laws;
- Redistribute available vaccine stocks to ensure supplies of thimerosal-free flu vaccines are available where and when they are needed most;

- Identify and notify all pregnant women and guardians of children younger than 3 years who have received thimerosal-preserved vaccine in states with such applicable laws, and;

- Ensure all immunization programs are up-to-date and administered to the maximum extent practicable with applicable state laws.✍

Construction Begins on \$92 Million Trauma Research Facility

Construction of a \$92 million center for all Department of Defense (DOD) combat casualty care and trauma research missions began with a groundbreaking ceremony at Fort Sam Houston, TX, 11 January.

The 150,000-square-foot Joint Center of Excellence for Battlefield Health and Trauma Research marks the first construction project at Fort Sam Houston directed by 2005 base realignment and closure legislation.

"This is not just one new building we're building here; this represents a major commitment and acknowledgment of the importance and the impact that trauma research has on all patients," said MGEN George Weightman, commander of U.S. Army Medical Research and Materiel Command.

Military leaders from the Army, Navy, and Air Force joined community leaders at the ceremony. The new facility, slated for completion in September 2009, signifies a "new era in military medical research," Weightman said.

The research center will enable research and development experts, scattered throughout the nation, to centralize efforts, which will improve efficiency, reduce duplication and enhance the collusion between them, the general said.

By doing so, DOD will ensure "we continue to provide the best research in an environment that will enable (medical experts) to extend the boundaries of research," Weightman said.

The center will be colocated with the Institute of Surgical Research, which falls under Weightman's command and is next to Brooke Army Medical Center. The ISR also will benefit from BRAC with a 5,000-square-foot renovation.

In addition, the research center adds 230 people to the 440 already working at the institute, which totals "670 people dedicated to improving the quality of life of our wounded warriors," the general said.

"Locating this facility here (with the Institute of Surgical Research) at Fort Sam Houston is the absolute logical choice," he said.

Weightman attributed the high survivability rate of today's war in part to the institute, which steadily has produced life-saving products and technologies.

Innovations include new field dressings and tourniquets, hemoglobin-based oxygen carriers with a 2- or 3-year shelf life rather than 30 days, new methods for wound closure

after a burn injury, and five interrelated computerized devices that allow medics to provide quality care to wounded service-members at the point of injury.


The focus of the Institute of Surgical Research and the future focus of the new joint center will be on the delivery of immediate care for warriors who suffer life-threatening injuries on the battlefield.

"This is not just pie-in-the-sky research.... (The institute) has been saving lives and improving function every day since it has been open," Weightman said. "It's just incredible, the comprehensiveness and far-reaching aspects."

The combined research efforts of the Institute of Surgical Research and the Joint Center of Excellence for Battlefield Health and Trauma Research will benefit not only military members, but civilians as well.

"While the causes of trauma are different, the responses are similar," Weightman said. "And the interventions to save lives are remarkably similar. The fruits of this labor will help every civilian in this nation."

The funding for the project is well-spent, Weightman said.

"I can't think of a better investment of taxpayers' dollars," he said. 

—Story by Elaine Wilson, Fort Sam Houston Public Information Office, Fort Sam Houston, TX.

NAMI Launches Navy's First Hyperbaric Clerkship Program

In early November, the Hyperbaric Medical Department (HMD) at the Naval Aerospace Medicine Institute (NAMI), Pensacola, FL, officially launched its hyperbaric medicine clerkship program for family medicine residents, graduating the first physician on 14 December.

LCDR William F. Mann, is the first Navy family practice resident to receive hyperbaric medicine training at NAMI as a means of treating clinical patients, said LT Victor C. Gordon, NC, HMD's division officer.

"The hyperbaric medicine rotation is an exceptional learning opportunity," said Mann. "It taught me skills to recognize and treat diving decompression injuries. And it also taught me a broad skill set in recognizing the importance of hyperbarics in many other fields of medicine as well."

The 4-week rotation training course is designed to introduce Naval Hospital Pensacola family practice residents to hyperbaric medicine, said Gordon. "The training includes informal lectures and some hands-on training with clinical patients, said Gordon. The residents even train to become inside tenders; that is, they get trained to be inside the hyperbaric chamber while it's running."

Hyperbaric oxygen treatment is more commonly known to treat decompression sickness, known as the bends, that can



LCDR William F. Mann, left, listens to instructions from Naval Aerospace Medicine Institute hyperbaric medical department division officer, LT Victor Gordon. Photo by Rod Duren, Naval Hospital Pensacola, FL.

occur to SCUBA or deep-sea divers, said CAPT Brett Hart, HMD's department head.

"But, there are actually 13 kinds of illnesses that can be treated with the hyperbaric chamber, including air or gas embolisms and carbon monoxide poisoning," said Gordon. "Patients go into the hyperbaric chamber and get concentrated doses of oxygen. This helps drive the healing gas of oxygen into tissue."

Oxygen is essential to properly heal body tissue. Hyperbaric oxygen treatment substantially increases oxygen flow within tissues to improve healing.

The NAMI chamber where Mann trained is a multi-place chamber—one chamber with multiple seats available for treatment. Those receiving treatment don a hood or aviation-style oxygen mask that delivers 100 percent oxygen directly to the recipient. The oxygen is also pressurized during treatment, so actual air pressure may be 2-3 times greater than normal. The end result is more concentrated oxygen absorbed into the lungs and thus delivered to the skin and tissue in a shorter time.

"Hyperbaric treatment is an adjunct to the standard care management of patients who have difficulties with wound healing, suffer from malignant infection, or an acute ischemia," explained Hart. Ischemia occurs when constriction or an obstruction of blood vessels causes a decrease in blood supply to tissue or bodily organ.

"The science in how and why it works is very fascinating," admitted Gordon. It isn't well known, "and like anything else, it doesn't work with everything. But, it's one treatment out there that has significant potential."

Hyperbarics is currently a rescue treatment, but research indicates that hyperbaric treatment before a major surgery could speed recovery and lessen the affects a procedure has on the body, Hart said. Introducing residents to this knowledge and providing hands-on-training is the point of the program.

The chamber's proximity and availability provide an ideal opportunity for both Navy patients and residents at little cost, said Hart. And the patients at Pensacola reap the benefits.

"We're not trying to recruit these residents into hyperbaric medicine," said Gordon. "We just want them to leave here and be able to recognize the various illnesses they might come across that are treatable with hyperbarics."

Still, Mann said he will take a closer look at hyperbaric medicine because of the training. "The skills I learned will directly improve my abilities to care for operational active duty

men and women,” said Mann. “The experience has definitely broadened my clinical acumen, and I will definitely consider a field in hyperbaric medicine.” ✍

—Story by MC1(SW) Nick De La Cruz, USN, Navy Medicine Support Command, Public Affairs, Jacksonville, FL.

Expeditionary Medical Facility Kuwait Commissions New Hospital

Expeditionary Medical Facility Kuwait commissioned a new \$12.45 million, 34,000-square-foot hospital to replace the current facility which is the last theater inpatient medical treatment facility housed in tents.

The flags of the United States and Kuwait, along with the service and state flags, festooned the sky with color. The Commander Naval Forces Europe Band was on hand to provide musical support and marked the occasion with the proper dose of pomp and circumstance.

During his remarks, EMF-K commanding officer CAPT Kevin D. Moore, MC, described the opening as “bittersweet” for the current detachment that is set to redeploy in the near future. Moore added the spirit of EMF will endure.

“Despite the hard structure, we must remain expeditionary in nature,” said Moore. “We will remain ready, willing, and able to preserve combat strength.”

Deputy Commanding General United States Army Central, MGEN Dennis E. Hardy, said the new facility has a lot to do with the future and reinforces a “total force commitment to help stabilize an unstable part of the world.”

Moore took charge of the hospital from COL John Alexander, ASG-Kuwait commander, who in turn charged the hospital staff to proceed to the facility with the words “Man the hospital. Bring her to life.”

The first Officer of the Day of the facility, LTJG Kerry Chromiak, took the order, then she and the initial watch team saluted and



LTJG Kerry Chromiak waits for the order to “Man the hospital.” Photo by MC1(SW) Cindy Gill

made their way on board through a ceremonial gangway. “It’s an honor to be part of the crew and open the new hospital,” said Chromiak.

The ceremony brought to a close a path which began 24 May 2007 when the contract was awarded. Physical construction began 18 June 2007. The U.S. Army Corps of Engineers served as the construction agent responsible for design and oversight.

Unlike most construction projects, the facility was built and outfitted in a little over 180 days. Despite the short time, the facility is unique in that the design model was ongoing simultaneously with the facility construction.

EMF-K meets Level III trauma support functions with an intensive care and trauma unit, emergency room (or casualty receiving), operating rooms, pharmacy, and x-ray facilities. Additional features include an outpatient clinic and administrative areas.

The day-to-day configuration has a 21-bed inpatient ward, 4-bed ICU, and 11 in CASREC. The facility is expandable to 50 beds in an emergent situation.

EMF-K serves the medical needs of U.S. military and coalition forces as well as Department of Defense civilians.

Moore thanked all who made the building possible and praised the Army/Navy team. “As long as EMF remains, it is in good hands,” he said. ✍

—Story by MC1(SW) Cindy Gill, USN, EMF-K Public Affairs.

Medical Team Provides Services to CJTF-HOA Personnel

The primary mission of Expeditionary Medical Force 12 is to provide medical services to more than 1,800 personnel assigned to Combined Joint Task Force-Horn of Africa (CJTF-HOA) at the Seth Michaud Emergency Medical and Dental Facility at Camp Lemonnier, Djibouti.

“The primary function of the EMF in this deployed environment is to provide acute medical and dental care to CJTF-HOA and Camp Lemonnier personnel,” said LCDR Michael J. Barker, EMF 12 general surgeon and senior medical officer. “We also provide emergent and limited elective surgical care. In support of this mission, we provide preventive medicine services, physical therapy, pharmacy, laboratory and radiological services.”

In a given week, the EMF, staffed by 35 sailors, sees an average of 315 patients for medical services.

“The most common medical service provided is military sick call, which usually treats respiratory infections, gastrointestinal illness, dermatologic conditions, and orthopedic injuries,” said Barker. “The EMF is not equipped to provide specialty care due to limited resources such as diagnostic equipment.”

When service members require more assistance than what is available at Camp Lemonnier, patients are seen at Bouffard

French military hospital in Djibouti, which has the equipment to treat their symptoms appropriately.

EMF 12 is able to assist not only fellow sailors but their fellow service members as well.

"All special operations personnel depend on conventional military units like the Camp Lemonnier EMF to provide surgical care and support for our warriors," said COL Michael P. Mouri, Special Operations Command flight surgeon and diving medical officer. "We are most fortunate and appreciative to have a medical and nursing staff commanded by CAPT Julie L. Miavez, MC, to care for our operators, other joint forces and contractors stationed here."

Recently a patient assigned to Special Operations Command and Control Element (SOCCE) had an elective surgery, which enabled him to not only stay in the deployed location, but the capabilities of the EMF provided him a short recuperation.

"Laparoscopic surgery offers many advantages over older, traditional techniques," he said. "For the patient, it is minimally invasive, meaning less trauma to the tissues, reduced pain and faster recovery time with a decreased chance of infection."

"If LCDR Barker, who completed a laparoscopic surgical fellowship, was not here, we would have had to evacuate our senior enlisted advisor back to the U.S. for surgery and would have lost his services for 2-3 months," said the SOCCE surgeon. "Instead, he gets all four hernias repaired in a combat zone theater and returns to work in 2 days. That kind of service is invaluable for a tactical line commander, especially in special operations where our staff is traditionally very small in number."

Being able to assist patients and their commanders, like the SOCCE community, is part of the many pleasures the EMF 12 staff share, but there are other enjoyments this deployment has brought to the staff as well.




LCDR Arlene J. Hudson, anesthesiologist (left) talks to ENS Doug T. Johnson, RN, about the process for putting a patient under general anesthesia at Seth Michaud Emergency Medical and Dental Facility at Camp Lemonnier, Djibouti. Photo by SSGT Jennifer Redente

"I like the camaraderie that you get with the medical team, which entails corpsmen, doctors, and nurses from all over," said HM2 Matthew E. Thompson. "It's a job of constant learning and evolving to become a better technician or a better corpsman."

As with similar enjoyments, EMF 12 personnel also share their dislikes of being away from their family, which included the holiday season during the 6-month deployment, but the medical professionals understand it is a part of the serving their country.

"It is a chance to serve in a location where people are truly making a difference in the lives of others, and hopefully, those changes will be such that all of our contributions will help to increase the security of our nations and contribute to the welfare of all humanity," said HMC Shane O. Chung, an EMF 12 independent duty corpsman.

CJTF-HOA's mission is to provide support in preventing conflict, promoting regional stability, protecting coalition interests, and prevailing against extremism in East Africa. 

—Story by SSGT Jennifer Redente, USA, CJTF-HOA Public Affairs, Camp Lemonnier, Djibouti.

NMCPHC Activities Located Nationally, Public Health Support to Fleet Is Global

When the Navy Environmental Health Center (NEHC) headquartered in Portsmouth, VA, changed its name to the Navy and Marine Corps Public Health Center (NMCPHC) in November, the purpose was to better capture the global nature of the command's public health services and more accurately represent their primary customers. The NMCPHC mission remains the same: to provide leadership and expertise to ensure mission readiness through disease prevention and health promotion in support of the national military strategy.

NMCPHC is one of the five echelon-4 commands that belong to the Navy Medicine Support Command headquartered at Naval Air Station (NAS) Jacksonville.

"We have provided public health expertise to Navy and Marine Corps activities, public health professionals and communities since our inception," said CAPT William R. Stover, NMCPHC commanding officer. "Our new name is intended to make our connection to our customers more intuitive, and thereby strengthen our relationship."

NMCPHC is headquartered at the Naval Medical Center Portsmouth campus in Virginia, but its subordinate activities are as far away as California.

Navy Drug Screening Laboratory (NDSL) San Diego and the Comprehensive Industrial Hygiene Laboratory (CIHL) Detachment West are both in San Diego on the West Coast.

In the Midwest, NDSL Great Lakes is at Great Lakes Naval Station, IL.

In the East Coast region, NDSL Jacksonville and the Navy Entomology Center of Excellence (NECE) are both located at NAS Jacksonville. The Naval Dosimetry Center (NDC) is located at the National Naval Medical Center in Bethesda, MD. And CIHL Det. East is at Naval Station Norfolk, VA.

Navy Drug Screening Laboratories

The three drug screening labs conduct forensic (legally defensible) and scientifically accurate chemical analysis of urine samples for the presence of controlled substances and illegal drugs. They screen more than 2 million samples annually. As a result they collect data that help determine shifting drug use trends. The success of the Navy's Drug Testing Program has proven to be a deterrent of drug use throughout the fleet, which has increased overall fleet readiness.

Navy Entomology Center of Excellence

NECE helps ensure U.S. military force readiness by providing expert training and technical services to reduce the risk of diseases transmitted by insects (i.e. vectors) and other arthropods. NECE also conducts ship and shore station visits to support local command disease vector and pest management programs like West Nile Virus.

Considered a unique asset for the DOD, NECE often participates in disaster relief operations to minimize the risk of vector-borne disease to U.S. personnel assisting in the disaster area, as well as the impacted civilian populations.

Comprehensive Industrial Hygiene Laboratories

The two industrial hygiene labs are responsible for analyzing more than 28,000 samples annually. They provide consultation and analytical services in industrial hygiene sampling, analysis and occupational toxicology. This includes chemical analysis of air for toxic proprietary products and toxicological testing to evaluate exposure to hazardous materials. Some of the more unique analyses include bulk asbestos analysis and asbestos fiber counting; organic solvents used in industrial processes; mass spectrometer screening for general 'unknowns'; and mineral and organic acid mist.

Naval Dosimetry Center


NDC's mission is to provide centralized and accredited radiation dosimetry and spectroscopy service, and radiation health consultation. The NDC is also an occupational radiation exposure registry. Each year NDC processes more than 500,000 occupational radiation exposure badges, called TLDs. It is the largest military radiation dosimeter processor in the world and is a critical component to continued and reliable operations of the U.S. Naval Nuclear Propulsion Program.

All these contributions support the core business processes or product lines of NMCPHC: health risk assessment, de-

ployment health, health information, health promotion and wellness, and public health response.

According to Stover, the term "public health" is used in the U.S. and around the world to describe activities and professionals who are involved in preventing disease by controlling their sources, promoting health and wellness, monitoring populations to detect changes in their health status and recommending interventions to preserve health.

As the nomenclature indicates, the name now reflects what the NMCPHC public health professionals do every day for the Navy, Marine Corps and the civilian sector.

For more information about NMCPHC, its subordinate commands, and its command operations, visit the website at www-nmcphe.med.navy.mil 

—Story by MC1(SW) Nick De La Cruz, Navy Medicine Support Command, Jacksonville, FL.

Dynamic Performance Measurement and Executive Dashboard Developed at NAVMEDLOGCOM

Navy Medicine Logistic Command (NAVMEDLOGCOM) created a dynamic performance measurement system to provide vision and insight across the organization. The project answers the following key questions for proactive leaders, managers, and staff:

- What is the real-time operating efficiency of your department or command relative to annual and strategic plans, high visibility command programs, workload, and mission?
- What are the documented processes and metrics in each area? Version control? Crisis management and problems recur with absent documentation of processes, which causes inefficient mission accomplishment, low morale in the workforce, costly waste, and inefficient use of resources. In other words, bad outcomes. The proven better way is to document processes and correct deviations from the process, which not only provides a tremendous training tool for new staff, but survives staff turnover and accomplishes predictable control over your own management and leadership destiny.
- What is the process to correct and improve processes? How do you define and correct root causes? How are corrective actions documented, implemented, and closed?
- Based on data and measurements, which areas need additional resources? What is the outcome of each program?
- How do you make "visual" to the organization what's important, such as the goals, metrics, and performance status of a department, directorate, and overall organization?

Defining answers to these questions is a challenge that, when achieved, creates strategic vision and insight across the organization—transparency, as the basis for possible course adjustments and resource allocation. Inherent com-

plexities, information silos, and multiple processes make achieving transparency and managing performance with data a difficult task. Answers require not subjective and general formulations, but objective measurements and flow-charted business processes. The vision is to accurately reflect workload processing outcomes, embed self-sustaining quality systems and processes that integrate new best practices then visually show how efficiently a work center and overall organization processes work relative to its assigned objectives and the mission—a transparent, dynamic performance measurement system.

The right leadership is the most important prerequisite aspect of converting to a performance measurement system—leadership that the staff and employees support to create cultural change. Without it, the program will not be effective. The right project leader is a change agent, who inspires others with a vision, builds consensus and teams, and has solid support of leadership.

Aligning Operations to Mission Goals

Optimal performance is not possible until key metric measurements and customer feedback are made visual and visible across the organization. This casts new light—not as a tool to attack operations or problem areas—but instead as a focused, strategic tool of inquiry, to more accurately measure performance and align operations to mission goals. This improves the organization's ability to focus on key goals.

NAVMEDLOGCOM Executive Dashboard of Performance Indicators

NAVMEDLOGCOM designed and implemented a powerful tool to answer these complex questions by developing validated process metrics, then creating a digital display of results—showing operations in real-time. The NAVMEDLOGCOM Executive Dashboard of Performance Indicators shows metric-based performance status by organizational structure, such as branch, division, department, directorate, critical programs, then cross-functional areas, such as compliance reporting, annual and strategic plans, then calculates composite score based on a summary of command-wide metrics in the dashboard.

How the Executive Dashboard Works

1. Metrics are developed by consensus of directors and the command, then assigned to each directorate/department.

2. Performance is then quantified to equate to a score on a scale, as “red, yellow, or green.” The metric scoring scale is fairly weighted to take into consideration possible problems with processing the workload, including an “alternative scoring scale.”

3. Metrics that apply to strategic goals are “mapped” from the directorate/department level to strategic goal area(s). Right-clicking on the slider bar in the directorate level shows “mapped metrics,” or all metrics comprising the score.

4. The “Composite Score” located at the top right side of the dashboard is the average score across all measured areas—the real-time composite status of all organizational work.

5. For quick reference by users, on-screen links are provided to both the annual and strategic plans.

Features of the Dashboard:

- Strategic and Operational (daily business) levels. Operational level metrics are mapped to strategic goals
- Status of all programs viewable from desktop link
- Color coded status indicators of “green, yellow, and red.” “Green” means success in meeting requirements; “yellow” means the program is facing challenges/falling behind schedule; “red” means program is behind schedule/additional review and resources may be needed.
- Directors and representatives from each department:
 - 1) participate in development of challenging metrics based on type of work being performed, such as quality, quantity, timeliness, or other;
 - 2) once metrics are approved by the CO and XO, representatives must get approval from the XO to change assigned metrics;
 - 3) receive password and read/write authority, as appropriate, to the Dashboard;
 - 4) may provide “free text” comments in the program to explain scores of “yellow” or “red,” and
 - 5) keep metrics current.
- Easy updating of documentation and metrics from desktop link—about 10 minutes per week.
- Forgotten passwords instantly created and reassigned by the program
- 24/7 access for review and update
- Oversight and insight—CO/XO, Executive Steering Committee, Board of Directors and Directors’ meetings review “red” scored areas
- Adaptable to changing mission and “quick shaping” to mission—dynamic, applicable to any organization’s mission.

Benefits

- Visibility—gain strategic transparency of operations, cast spotlight on successes, challenges, problems
- Alignment—tracks programs/projects to easily analyze information and gain unified view of performance, align operations to key objectives
- Responsiveness—optimize performance, allocate resources to meet or exceed mission goals. Strengthen accountability and responsiveness to customers’ (internal and external) requirements
- Monitor high visibility programs—status of annual and strategic plans, physical readiness program, individual medical readiness, departmental metrics, customer satisfaction feedback ratings, and any program areas that must be visible
- Improve focus on key goals
- Communications—all personnel may view the dashboard—to see what is important in their department and overall organization
- Quickly delivers real-time, detailed performance information to decision makers without the need for multiple

meetings to identify problems and issues—it's in the dashboard.

The dashboard links performance measurement and strategic planning into an integrated management tool.

NAVMEDLOGCOM Achieved ISO 9001:2000 Triennial Certification


The goal of NAVMEDLOGCOM's Quality Management System (QMS) is the efficient and effective mission accomplishment through continuous process improvement with fast identification and correction of variations in processes. The result is reduced variation, improved quality, and improved process/mission effectiveness. As a key management tool, it supports the Command Evaluation Program. NAVMEDLOGCOM is distinguished as the only ISO (International Standards Organization) certified medical logistics command among the Services.

ISO certification is attained by meeting rigorous process documentation standards respected by Wall Street: creation of dynamic Management Operating Procedures (MOPS) showing customers' expectations, flowcharts, metrics, how customer feedback is captured, schedule of audits on each process, and Corrective Action Report (CAR) database. These are posted on the Intranet for increased visibility and access by the organization. An ISO-compliant QMS means

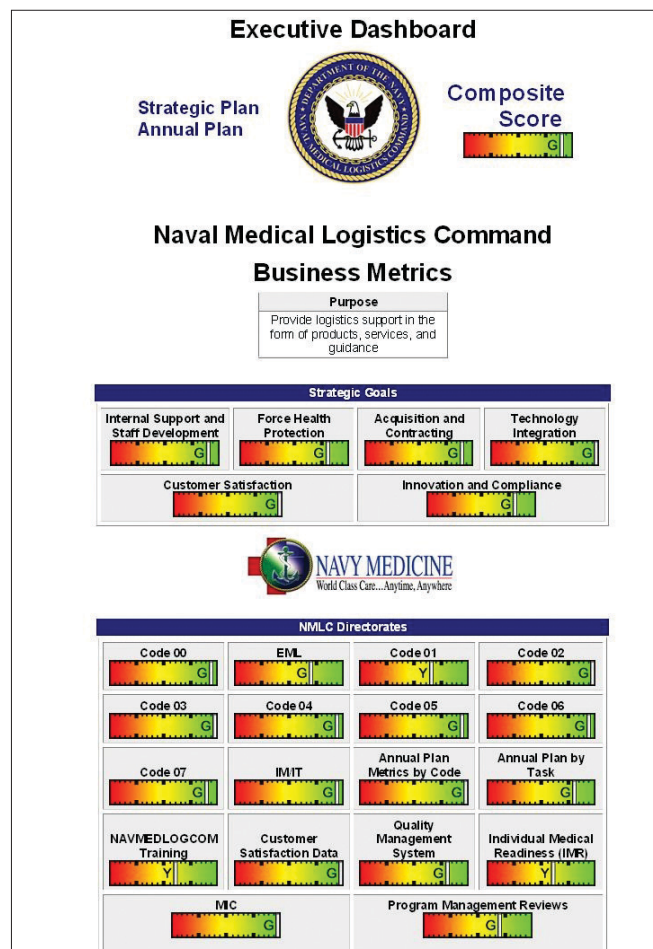
standards of excellence are achieved, which include showing definition and alignment of customer requirements, processes, measurements, and customer feedback. This positively impacts performance, since all processes are updated in a self-sustaining QMS, including realignment of processes as customer and mission requirements change. In the QMS, these are repeatable, predictable processes that survive staff turnover, because each is documented. What's more, the flowcharts and management operating procedures are great for training new staff.

The ISO QMS serves as a mechanism for compliance with regulations by fully embedding compliance, best business practices, and related activities into day-to-day processes. An ISO certified organization has many tools and measures available to implement and analyze the results of activities built into the daily operational structure through the QMS.

In comparison to models such as Lean Six Sigma (L6S) and Baldrige criteria, it appears that ISO is the only model with a Quality Management System. NMLC also uses L6S and aspects of Baldrige. Lean (reduce/eliminate non-value added activities), and Six Sigma (reduce variation, increase quality).

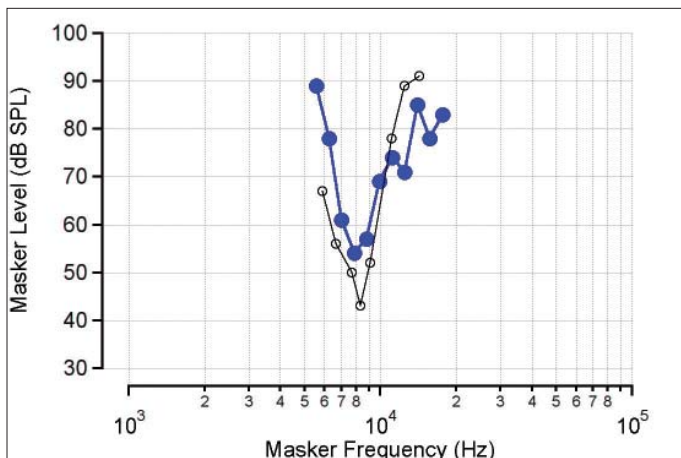
In conclusion, these tools combined to create strategic vision and insight across the organization on a real-time basis. Prerequisites for success: 1) unwavering support by top management, who makes it a performance evaluation issue and priority with department heads; 2) culture change to performance measurement, where staff do not fear measurements of effectiveness applied to their processes, and 3) a strong leader of the command evaluation program. 

—Story by CDR Douglas C. Dellinger, MSC, Chief Information Officer, Director for Quality Management, NAVMEDLOGCOM, Fort Detrick, MD.



Mid-Infrared Lasers Combat Neurologic Injuries From IED Blasts

Best-induced traumatic brain injury (BI-TBI) has become one of the leading injuries in soldiers and Marines returning from Iraq and Afghanistan. Some 60 percent of all military injuries seen in these regions may have a TBI component. (1) Reports from attending physicians consistently identify problems with cognitive, cochlear, and vestibular (balance) function as the most prevalent injuries, resulting from close proximity to detonated “improvised explosive devices” (IEDs)—homemade bombs that can vary from something the size of a soda can to an entire moving vehicle. “We have had TBI in every conflict we’ve ever been involved with, but this is more of an urban-warfare situation, with troops in alleyways, on street corners, and in among the



local population,” says CAPT Michael Hoffer, MC, of the Naval Medical Center San Diego (NMCSD; San Diego, CA). “The most damaging thing we see most frequently is IEDs. These particular explosives produce a low-pressure sound wave that can do damage due to the wave property. The physics produce TBI even in someone who is not directly impacted by the device.” (2) Accurately assessing and treating these injuries poses a number of challenges, in large part because the injuries are not always obvious and because there is a general lack of understanding about the mechanics behind the neurologic damage caused by IED blasts. Given the relatively large number of troops suffering from IED-related injuries, there is clearly a pressing need for technologies and techniques that can provide better insight into the physiology behind IED-related effects on hearing, balance, and cognition and aid in the development of optimal treatment strategies.

Hoffer and his colleagues at NMCSD—which boasts the most experience with TBIs of any military clinic in the United States—have spent the last several years working to do just that. They are now forming a collaborative effort to evaluate and treat returning troops suffering from BI-TBI that includes Harvard Massachusetts Eye and Ear Infirmary, Northwestern University, Walter Reed, and Vanderbilt University. In late 2007 the team submitted a proposal to the U.S. government’s Congressionally Directed Medical-Research Programs initiative; if the funding goes through, the project should begin to move forward in 2008.

“Because we’ve been through the experience of TBI for 6-7 years, the surgeons general, joint chiefs, and congress are very interested in being organized on how we approach TBI,” Hoffer says. “The patients look like they have no injuries, but when you start talking to them it is clear that they are not thinking, balancing, or hearing as well as before they went over there. We are on the cutting edge of researching and developing diagnostic tools because we see the highest number of patients returning from the conflict with these injuries.”

Another key member of the BI-TBI collaboration is Aculight (Bothell, WA), which has developed proprietary mid-infrared (1850 nm) diode-laser system designed to deliver optical energy directly to certain nerves in order to stimulate specific reactions. The company has been working with Vanderbilt and Northwestern on related projects that are helping to lay the foundation for the BI-TBI project, with particular emphasis on nerve stimulation and hearing. The two go hand in hand, according to Mark Bendett, director of medical products for Aculight. “Fundamental work done a few years ago at Vanderbilt demonstrates that, just as an electrical current can stimulate nerves, so can light,” he says. “But light is really good at doing other things too, like ablating tissue. So the trick is to find the wavelengths that are absorbed at the proper depth so that you stimulate the nerve tissue without ablating it.”

Aculight and its collaborators have developed the model for what those wavelengths are, he adds, along with specific lasers to address specific nerves, such as sciatic and cochlear.

Infrared stimulation in the cochlea can selectively stimulate a population of cochlear neurons (blue line in the chart). The results are similar to the selectivity of acoustic stimulation at low sound levels (black line in the chart). It is not possible to achieve the same selectivity of stimulation with electrical stimulation.

The key nugget for optical-nerve stimulation is that it is far more spatially specific than electrical stimulation,” Bendett says. “Where you put the light is where it goes. This is important for things like the cochlear nerve, which is extremely tiny, and also for vestibular system.”

In addition to its work in nerve stimulation—the company has exclusive license to this technology and its applications, originally developed at Vanderbilt—Aculight was awarded a Small Business Innovation Research grant in October 2007 to develop an optical cochlear implant in conjunction with researchers at Northwestern. This work has implications for the BI-TBI project; aside from developing tools to restore hearing and balance the project will also utilize mid-IR nerve stimulation for nerve mapping in animals to provide a better understanding of the physiological effects of IED blasts.

“We’ve used laser technology in medicine and surgery for the last 20 years,” Hoffer says. “But some of the things that Aculight is doing with the mid-infrared will expand the ability to do what we’ve done before.”

REFERENCES

1. “A Shock Wave of Brain Injuries,” *Washington Post*, 8 April 2007.
2. “IED Blast-Related Brain Injuries: The Silent Killer,” www.defense-update.com.

—Story by Kathy Kincade, “Reprinted with permission. Copyright © 2008 BioOptics World.” <http://www.bioopticsworld.com/articles/316643y>



Kabul, Afghanistan. LCDR Frank Grassi, right, assigned to the Combined Security Transition Command-Afghanistan, checks on a patient 3 days after an Afghan doctor performed a pericardio centesis procedure on her. It was the first time this procedure had ever been done at the National Military Hospital, and it saved the 15-year-old patient's life. Photo by MC1 David M. Votroubek, USN



Yokosuka, Japan. HM2 Victor Brown demonstrates how to properly apply a splint during the 7th Fleet Specialty Conference at U.S. Naval Hospital Yokosuka. The conference gave area independent duty hospital corpsmen (IDC) and general medical officers (GMO) training on specific types of diagnoses, examination techniques, and various treatment options. Photo by MC Kari R. Bergman, USN



Okinawa, Japan. HM2 James A. Bloxsom, assigned to Naval Mobile Construction Battalion (NMCB) 5, applies sutures to a patient's injured chin in the Camp Shields medical clinic. NMCB-5 is deployed to several locations throughout the Pacific Command's area of operation providing construction support to area commanders. Photo by MC3 Patrick W. Mullen III, USN

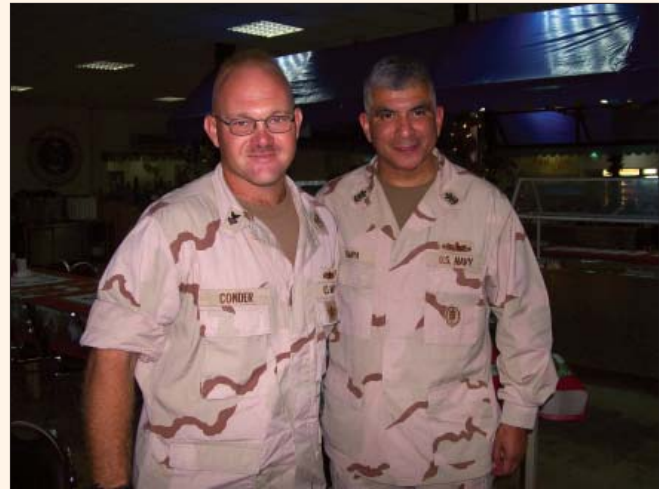


CLB-4 Dental Team at Al Qa'im and Korean Village. Pictured left to right: LT Sarah Lawson, HM2 Ronnel Bittig, and HM3 Gabriel Villalba. Photo courtesy of LCDR Rasha Hanna, DC, USN



Camp Lemonier, Djibouti. HM3 Taylor Simpkins, identified by his dog tags provides medical support if needed to the Marines assigned to the 3rd Low Altitude Air Defense Battalion deployed with the Combined Joint Task Force-Horn of Africa. .

Photo by TSGT Jeremy T. Lock , USAF



HM1 Eric Conder of Combined Joint Task Force-Horn of Africa's Surgeon Cell poses for a photo with MCPON, Joe Campa, before being presented with a Joint Service Achievement Medal. The MCPON presented Conder with a JSAM for his contributions to CJTF-HOA and the Surgeon Cell from July-Dec. 2007. The MCPON visited Combined Joint Task Force-Horn of Africa 24-26 December to spend the holidays with the troops who are deployed in support of Operation Enduring Freedom. Photo by MC1 Mary Popejoy, USN



HM1 Reynaldo S. Datu (left) advises Afghan National Army(ANA) CAPT Amanullah (right) on potential medical assistance locations within Anchagal village, Naray District, Kunar Province, Afghanistan. Also pictured is Maroof, an Afghan interpreter. Amanullah is an ANA medical doctor assigned to 3rd Kandak (Armored), 3rd Brigade, 201st Afghan National Army Corps. Datu is a hospital corpsman assigned to ETT 7-2, which is deployed to Afghanistan from Okinawa, Japan, to work with the ANA. Photo

by SSGT Luis P. Valdespino Jr., USMC



HM3 Amber Bretzman, a member of the U.S. Navy Fleet Surgical Team embarked aboard the amphibious assault ship USS *Tarawa* (LHA-1), provides a local fisherman with minor field surgery in Doblarchar, Bangladesh. *Tarawa* responded to Tropical Cyclone Sidr, which struck the southern coast of Bangladesh 15 November 2007. Photo by MC3 Daniel A. Barker, USN

The Society for the History of Navy Medicine

Vision Statement:

The Society for the History of Navy Medicine is an international association of people interested in the history of all aspects of medicine as it relates to the maritime environment.

Mission Statement:

The mission of the Society is to promote the study, research, and publication of all aspects of maritime medicine.

The Society will be a means of “mutual support” and communication for people of all countries—civilian, military, academic, independent scholar, medical practitioner—who are interested in the topic.

Joining the Society:

Anyone wishing to join the Society should e-mail CAPT Thomas Snyder, MC, USNR (Ret.) at thomaslsnyder@gmail.com. In your message please include your name, rank (if military), and list any specific interest/specialty you might have in Navy medical history (e.g., Civil War medicine, Navy nursing, hospital ships, hygiene, etc.)

The *Hospital Corps Monthly* newsletter is now available electronically. To have your personal copy delivered to your mailbox please contact:

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Hospital Corps Planner/Action Officer
Bureau of Medicine and Surgery
2300 E Street NW
Washington, DC 20372-5300
Office: (202) 762-1682
Mobile: (202) 445-0503
Fax: (202) 762-3224
Matthew.Lubold@med.navy.mil

Navy Reserve RDML Karen A. Flaherty, NC, USNR has been nominated for appointment to the grade of rear admiral (upper half). Flaherty is currently serving as deputy commander, force integration, Bureau of Medicine and Surgery, Washington, DC.



Hospital Corps School Instructor Selected as Navy Medicine Sailor of the Year

Navy Medicine Support Command's (NMSC) Regional Sailor of the Year, a Naval Hospital Corps School instructor, was recognized in Washington, 24 January, as the Navy Medical Department's Sailor of the Year for 2007. HM1(SW) Ashley Lee Thomason was introduced as Navy medicine's Sailor of the Year by VADM Adam M. Robinson, Surgeon General of the Navy, during the Surgeon General's 2008 Leadership Conference.



“I was very excited, but I was also in disbelief at the same time,” Thomason said. “I still cannot believe that I have been selected as BUMED Sailor of the Year.”

The Excel, AL, native said his selection as the NMSC and now BUMED Sailor of the Year was “a culmination of my efforts as well as all those people who have mentored me and all those subordinates who have worked so hard for me.”

Thomason said his near-future plans are to continue to prepare for chief petty officer as well as the next level of competition at the Vice Chief of Naval Operations board in April.

“My goal from day one in the Navy has been to make master chief and to retire after 30 years of naval service,” Thomason said.

Naval Hospital Corps School is Thomason's third duty station. His previous tours include Naval Hospital Cherry Point, NC, and USS *Carney* (DDG-64).

As an instructor, Thomason is responsible for training, molding, and mentoring 430 students through the basic hospital corps school curriculum.

“I instruct classes of 65 students quarterly on basic hospital corpsman fundamentals, emergency care, and nursing procedures,” Thomason explained.

Aside from making master chief, Thomason also intends to pursue higher education and earn his bachelor's degree.

—Story by MC1(SW) Nick De La Cruz, Navy Medicine Support Command Public Affairs, Jacksonville, FL.

Comfort's Skipper Recalls Hospital Ship's Humanitarian Mission

From June to October of last year, USNS Comfort (T-AH 20) conducted a 120-day mission to South America, Central America, and the Caribbean. During that mission, the hospital ship visited 12 nations, including Belize, Guatemala, Panama, Nicaragua, El Salvador, Peru, Ecuador, Colombia, Haiti, Trinidad, Guyana, and Surinam. Comfort's medical personnel saw over 98,000 patients and spread good will wherever it went.

Navy Medicine recently spoke with CAPT Bruce Boynton, MC, commanding officer of Comfort's medical treatment facility, about the mission and the future of "medical diplomacy."



Before the interview began, you mentioned that this mission affected some of these nations' leaders.

We had intense interest on the part of very senior leaders.

Three heads of state, multiple vice presidents, ministers of health, and ministers of defense visited *Comfort* and the primary care sites where we worked ashore. In one case, we could actually see the effects of medical diplomacy on the attitudes of foreign leaders. One head of state came aboard *Comfort* and saw his citizens being treated by our sailors, airmen, and soldiers. He was able to talk to patients before they went into surgery and while they were recovering. Our ambassador later told me, "This has changed the president's opinion of the United States. He can see that we are serious about taking care of his citizens." Subsequently, that leader invited us to the executive mansion for brunch. Medical diplomacy may enable the U.S. to interact with foreign governments on issues that are important but remote from medical concerns. So I think our senior leaders in Washington have it absolutely right. We are showing that the United States cares about people in these countries.

What other military services were represented on this mission?

We had a truly combined force—Army, Navy, Air Force, Air National Guard, Coast Guard, Canadian Defense Forces, U.S. Public Health Service, and civilian non-governmental organizations (NGOs). Project Hope did most of health education, and Operation Smile concentrated on cleft lip and palate repair.

What was Navy's role in the partnership?

Exactly how we work with NGOs is an issue that is still being worked out. NGOs will be our partner in future humanitarian work. But working out the exact role that each group will have is still problematic. I have met several times with the president of Project Hope on just this type of issue. What do they do? What do we do? We see this as a win-win situation and we, in the Department of Defense (DOD), will succeed by making them successful. As you probably know, some mistrust has existed in the past between DOD and NGOs. We think the solution to working together in the field is actually living together on the ship. When you take meals together, share the same berthing area, and work together every day, it engenders a spirit of cooperation. We see a commonality in our goals. That's what we're seeing right now.

It's useful for each group to have well defined roles. For example, when we had an NGO surgeon, we could put him right in with our military surgeons and that worked well. It's the same with a NGO OR or critical care nurse. When the NGO was given a specified task such as teaching this or that subject, that also worked very well. On the other hand, the NGOs have to feel that they have a fair amount of leeway to meet their goals.

What about the role of the host nations and their medical communities?

We usually worked through the ministries of health who, in some countries, provided security for our ashore primary care sites and set up operations beside ours. In many countries, the ministry of health sent medical students or other practitioners to the primary care sites to work alongside our physicians. That was very much appreciated for several reasons: First, they could help translate. Second, if there was an odd case that had been lost to their

system, they knew how to get that person in touch with the proper public health authorities. It might have been a rare disease they had been following or a case of TB.

In addition, we invited their host nation medical practitioners aboard *Comfort* either to tour, to observe, or sometimes to participate in care. As the commanding officer, I could privilege their surgeons under a plan of supervision. And they could then assist in the care of their citizens in the operating rooms. That was especially beneficial because when their heads of state came aboard, we could bring them out of the OR and their head of state could see that this was a true partnership in which their host nation professionals were participating in the care. Our docs felt that they learned just as much as they were able to teach.

Both *Mercy* and *Comfort* were retrofitted from tanker hulls in the mid 1980s to be hospital ships and were never meant for humanitarian assistance. How did *Comfort* function as a humanitarian platform?

It was successful but not without effort. There are several reasons for that. One, the *Mercy* and *Comfort* are converted San Clemente class supertankers. They are not highly maneuverable and have a 32-foot draft, a single screw and a single rudder, and a half-mile turning radius. They have no bow or stern thrusters. Many of the ports we wanted to approach did not have sufficient draft for the ship to pull in. And even when the channel was deep enough it was sometimes so narrow that we might not have been able to get out again. In those cases, we had to anchor offshore, in some cases 14 to 17 miles out. That meant that all patients and healthcare professionals had to be brought in by small boat or helicopters.

This was very tough because the helicopters we used were SH-60s, [Seahawk] which are 10-passenger helicopters. Moving 200 people ashore and moving patients back in 10-passenger helicopters created a lot of work for the aircrews. Small boats are so slow that their use is prohibitive unless you're within 5 or 6 miles of shore. And some of those seas were rough. We didn't want to put a post-op patient in a small boat in rough seas. We tried bringing in larger boats like catamarans. But when the seas were rough, making a gangway



U.S. Public Health Service RADM Kenneth Moritsugu, acting U.S. Surgeon General, passes through patients awaiting treatment at the Moulton Hall Methodist Elementary School. Photo by MC2 Joshua Karsten, USN

across from the catamaran to *Comfort* was a real problem. Sometimes we had 15-foot swells so moving people over a gangway that was moving up and down 15 feet was dangerous.

The hospital ship was ideal for surgery and post-op recovery but not necessarily for primary care, which comprised the bulk of our patients. To solve this, we transferred our nurses, physicians, veterinarians, and physical therapists ashore and set up primary care sites, where the bulk of our patients were seen. We set up at least two primary care sites in each country and could see between 700 and 1,000 patients per site, per day. We also set up additional sites to do education, construction projects, band concerts, veterinary care, and biomedical repair. We limited the patients who actually came aboard *Comfort* to those who needed surgery or sophisticated tests like cat scans or ultrasounds.

Was there a final tally on the number of patients you treated?

Yes. Slightly over 98,000 patients and almost 400,000 encounters. What's an encounter? It's a surgery. It's a prescription. It's the kind of primary care a pediatrician, internist, or family practitioner would give.

What types of medical conditions did you see?

We deployed expecting to see lots of rare diseases. But it's a truism: Rare diseases are uncommonly encountered. We saw common diseases, many of the same things we see in the U.S. But because of lack of access to medical care, these diseases had progressed to states that were much more complicated than we see in the U.S. There was a lot of gall bladder disease but it was very advanced. We saw many cataracts but they were very tough, fibrous, and difficult to extract.

The most extreme example was a woman with a small growth on her buttocks. In the U.S. this would have been removed almost immediately. Without access to medical care, this had grown to enormous proportions so she couldn't sit down. We removed it and changed her life.

It must have been tremendously gratifying to be able to make such a difference?

Yes. There were even more outstanding examples. We took care of a 13-year-old boy with congenital cataracts, and who had been blind since birth. We fixed the cataracts and now he can see for the first time as a teenager.

What were some of the other highlights that come to mind?

There were several. Many children had clubbed feet we were able to repair. An elderly woman had a very large ventral hernia. She was Guatemalan and lived on the other side of the country. She heard about *Comfort*'s visit and hitchhiked and walked 290 miles to get her hernia repaired.

Another case was an ex-matador with a huge prostate that we were able to excise. We saw some rare diseases, a case of neurocysticercosis that was very unusual. We saw a number of people with tragically multiple drug-resistant tuberculosis. That is a disease that is very expensive—almost prohibitively—to treat, even in the United States. In this case, the adults and children could not afford treat-

ment, nor could the government of that country afford to treat them. It was expected that they would die. We did what we could, but this points out the huge public health problem with this disease in emerging countries as well as the cost of giving that care.

What do you see as the future for the Navy Medical Department in humanitarian assistance?

I think it's very exciting and I think we're going to see a lot more of it. I think our senior leaders also see the value. I see a closer relationship not only between the military services, but also between DOD and the U.S. Public Health Service. The Public Health Service sent four teams of about 20 people each. They dress like us. They act like us. They're trained like us. We said, "Well, you're just like sailors" They were completely welcome. Secretary [Mike] Leavitt of Health and Human Services and the then [acting] Surgeon General of the United States [Kenneth Moritsugu] visited us during the deployment, so their involvement has top-level support. I think they will continue to partner with the Navy in future humanitarian missions. This was the largest maritime deployment in that service's history. They are gung ho about working with the Navy.

In addition, I think we'll see more participation with the medical departments of foreign nations. We had five members of the Canadian Forces, a welcome addition. And we were able to meet with some of the medical personnel from other countries who expressed interest in getting on board for *Comfort's* next cruise. There's nothing better than having medical professionals from many nations joining us.

I think we'll also become a lot smarter about how we carry out these missions. In a sense, we went to each country for a week, took care of people, and sailed away. But that's not sufficient in itself; it's just a beginning. We need to link these visits together. We also need to link up with each nation's ministry of health and find out what they need and what they see as their problems. This needs to be linked together into a coherent program rather than episodic visits.

So these missions may not necessarily require a hospital ship visit.

No. As an example, one country we visited had a very smart minister of health. The country had a system of clinics and regional hospitals and a national hospital. We were able to visit and make rounds there. But they don't have any gloves, gowns, or masks. These are simple things we could help them with. Also, because of the brain drain, they don't have any senior people to guide their residents. We can do this. That kind of continuing program will link our visits together. So it's more than just a hospital ship and we want it to be. We have received some criticism. "You came today, and now you're gone." We replied that, "We want a commitment. We want a relationship, not a one-night stand. This is the first date. We're getting acquainted. We'll be back."

Are there any future missions on the table?

As you know, *Mercy* is going out to the Western Pacific this year. There will also be other ships that go to the Caribbean and Latin America, and *Comfort* will return to SOUTHCOM for a similar mission in '09.


I want to go back to something we were discussing before the interview began. The *Baltimore Sun* ran an article about a particular case and you explained it very well. Could you discuss it again for the record?

One of the criticisms we received was that we didn't have the ability to do follow-up care on all the surgeries. That meant that we, in general, had to pick those cases that didn't require follow-up care. For example, we couldn't do heart transplants even if we had had a cardiac surgeon. In one particular case, in Haiti, one of our PAOs found a little girl in line who had a cleft lip and cleft palate as well. One of our plastic surgeons examined her and said, "I can't do the cleft palate because we don't have anyone in-country to do the follow-up. But I can do the cleft lip. It's only a 45-minute procedure."

Well, we received criticism for this. "You only did half the job."

What wasn't understood was there were two jobs. Failing to do the cleft lip would be wrong. Having a cleft lip in many emerging countries isolates you from society because that condition has been seen as mark of God's ill will or an association with the devil. Or you must have done something wrong. Even in the U.S., the repair of a cleft lip in the neonatal period is considered an emergency. It's a quick procedure. It helps with the bonding between parents and child. It makes this child more acceptable to society. It helps integrate the child into a role. This is all separate from the cleft palate. So doing that cleft lip was the right thing to do.

This is a good example. We can't do everything for these countries. In fact, the minister of health in Guyana said, "You can't do everything. We have to do it. We have to take care of our own people. But you can help us. You can train us. You can show us the way but we have to do it ourselves."

He's right. We can't do everything but we can show that we care. We can begin this relationship that will better these countries medically and, for individuals, we can change their lives. 



Luis Alva Castro, Peru's Minister of Interior, has eyeglasses fitted for him by an optometrist at Sanchez Carrion School. Photo by MC2 Joan E. Kretschmer, USN



“Get Me to Charlie Med!”

Combat engineer 1st LT William K. Gay, USMC, was assigned to the 1st Platoon, A Company of the 3rd Engineer Battalion. Gay's engineer force was attached to the 26th Regiment at Khe Sanh in late 1967. By March 1968, the strain of constant shelling and witnessing violent death everyday had taken a heavy toll on Gay and his men.

I arrived in Khe Sanh in October 1967. By that time Route 9, the only land access to Khe Sanh, had already been taken over by the North Vietnamese, and the bridges had all been blown. We were resupplied only by air. Enemy contact increased in November, December, and January preceding the official siege.

An increasing number of incidents led up to the siege, which began on 21 January [1968]. A few days earlier, a recon patrol had taken a large number of casualties and several people were killed.

My platoon, part of the engineer force, lived in bunkers. People made fun of us because those bunkers were dirty with the ever-present smell of mildew and stale air. But at least we were underground. When the rounds came in that morning, many units were still living above ground. All they had around their tents were sandbagged walls or 55-gallon drums filled with dirt. Those units suffered a significant number of casualties. All we did in our bunkers was get scared as the explosions went off.

On the morning of 8 March, I told my platoon sergeant, “Ski [SSGT Ron “Ski” Sniekowski], I can’t go out today.” I usually took out a squad and he took one out to do some work. We always left one squad back, ostensibly to improve their defenses—to put more sandbags on the bunker. But the real reason was that these were 19-year-old kids, and it would give them a chance to be under-cover for a day and decompress psychologically. So that day I said, “Ski, I can’t go out. My nerves are shot.” I had stopped eating by that time. In fact, I had not eaten for days other than the chocolate we got in sundry packs.

Ski responded, “Mr. Gay, you’ve been out every single day. Take a day off.”

So I rested on top of a bunker in the sun when a beautiful woman showed up—Jurate Kazickas. She was freelancing for U.S. newspapers, and was attempting to

do interviews with soldiers from New York.* We were all infatuated with her when she began to talk to us because she was tall, polished, very sophisticated, and very beautiful, even though she was filthy like the rest of us.

As we talked, one round came in some good distance away, causing us to begin moving to safety. The North Vietnamese forward observer that day was very good because the next rounds were right on us. I had just jumped into my bunker when I realized Kazickas was not in there with us. I went back out to get her, pushed her in, and then dove in behind her just as a round went off.

Kazickas got a lot of small dings but I got the big blast, including a very large piece that just about ripped my right buttock off. Another piece went through my right foot and shattered the joint. A piece went into my elbow and came out my shoulder, and lots of pieces ended up in both my legs and my arm. My flak jacket was almost ripped off my body, and my helmet was also badly beaten up. I knew I had been hit because I could feel the heat. I remember saying, “I’m hit! Dammit! I’m hit bad!”

I put my hand between my legs to determine if my penis and genitals had been blown off and came up with a handful of blood. To this day, where a big piece of shrapnel entered, I still have a scar about 3 inches long located an inch below my testicles.

My platoon corpsman was already giving me whatever painkiller he had. Shortly afterward, they threw me onto a mule—a platform with four wheels that looked like a rough-terrain vehicle of today—and took me to Charlie Med. Dr. [Donald] Magilligan was working on me when my platoon sergeant showed up. My one good hand still

*Bartimus, Tad; Fawcett, Denby; Kazickas, Jurate; Lederer, Edith, and Mariano, Ann, *War Torn: The Personal Experiences of Women Reporters in the Vietnam War*, Random House, NY, 2004.



When the siege of Khe Sanh began, the battalion aid station of the 1st Battalion, 26th Marines resided in an above-ground tent.

grasped the compass I had used to place the mines. I refused to let go of it because it was the compass we used in the mine fields and we needed it. Another compass might not have the same set of errors in it. I finally gave the compass to my platoon sergeant, Ski, and the doctors continued working on me.

Once I had been stabilized, I was carried on a stretcher to where the helicopters came in. The guys who worked at the chopper landing were all volunteers—all corpsmen and other Marines—and they had a tough and miserable job. They were the men who carried the stretchers. Although the medevac choppers would feint in one direction and go to another site, it didn't take the North Vietnamese very long to adjust their artillery or rockets and drop them in.

Ironically, the day I was wounded, I was supposed to be in Bangkok on R&R but I turned it down because I felt it was too dangerous getting in and out of Khe Sanh. The helicopters, the C-123s, and the C-130s were being shot down right and left so I wasn't real excited about getting off the ground.

I was on the last stretcher that was put on the first bird; it took off immediately. As the chopper rose, I looked down at the moonscape that was now Khe Sanh. It had once been a lush green coffee plantation. I then heard a voice say, "I made it!" I realized the voice was mine. I had made it out of Khe Sanh alive.

I and many others would not have made it out alive without the medical personnel at Charlie Med. At Khe Sanh, Charlie Med was a complete subculture with amazing people. When the siege began, those doctors were operating behind sand bag walls that weren't even full height. Prior to the Seabees building a bunker for them, the doctors were operating in different places so they all wouldn't be killed at one time. The number of people they treated

and then medevaced out was just unbelievable. Charlie Med was a constant conveyor belt of injured and mangled people. Those medical folks just worked day and night.

Charlie Med took care of our men. When the one corpsman assigned to my platoon wasn't helping us, he was running over to someone nearby who was wounded, patching him up, and getting him to Charlie Med.

I can't tell you how important Charlie Med was to the morale of all of us at Khe Sanh. As combat engineers, we always had to expose ourselves to enemy fire when we moved about the combat base. We found some extra courage to do so because we believed that if wounded, we would survive if our platoon mates could only get us to Charlie Med.

I can say this: Many, many more people would have died at Khe Sanh had it not been for the doctors in Charlie Med and the corpsmen and Marines who volunteered to put us on choppers. Throughout Khe Sanh we had all heard the account of the young Marine with the mortar round in his stomach—and the doctor at Charlie Med who had saved him.* That story led to the cry, "Get me to Charlie Med! They'll save me!" ✍

*For removing live ordnance from a wounded Marine, LT Edward Feldman, MC, received the Silver Star.



Photos courtesy of Edward Feldman

LT Edward Feldman monitors a patient's IV in the Khe Sanh bunker that housed Charlie Med.

Nobody Asked Me but ... A Model for Ethics Training

CAPT Elizabeth Holmes, USN (Ret.)

Practical step-by-step training in ethical decision-making would help all personnel recognize issues, decide what to do, and then act on ethical dilemmas in combat operations where leisurely reflection is seldom an option.

Current operations have confirmed the importance of GEN Charles C. Krulak's "strategic corporal," and that concept must be extended to the actions of junior officers as well. Recently, the Department of Defense announced that all U.S. service personnel in Iraq would receive more training in military ethics. Also, the findings from DOD's recent mental health review will likely call for more resiliency and hardiness embedded in the leadership curriculum. Those are psychological concepts, but one way to do that is to give officers more control with a model that leads to better decision-making, forestalling guilt and trauma later over improper decisions.

The plethora of ethics training programs out there does not offer a coherent, unified approach. Ethics training now takes place largely by osmosis; we expose our future officers to the Navy's and Marine Corp's traditions, cultures, and mores, hoping that they absorb it all. Other approaches are to examine the lives of leaders of character, tell "sea stories" to illustrate various virtues, or use case studies. None of these approaches explore the decision-making process or the factors influencing it. They are no help when trying to choose among competing values, in right-vs-right dilemmas. Nor

do they teach how to make decisions in a step-by-step way and so may be ineffective when officers have to act in real-life situations, playing out quickly in real time.

We need a more effective way to teach people how to make practical, pragmatic ethical decisions, a model based on sound theory and validated by research.

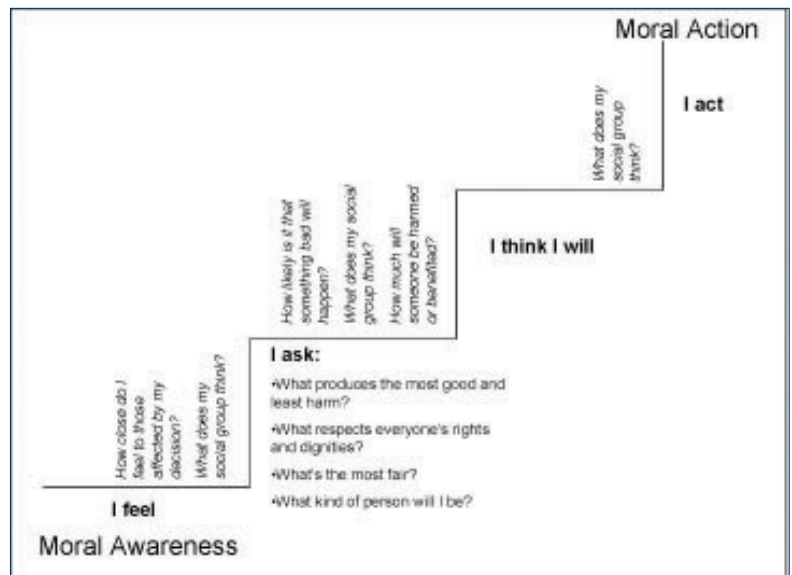
The model shown is a four-step approach based on James Rest's model, which combined cognitive-development, social, behavioral, and psychoanalytic perspectives, along with Thomas Jones' idea that moral intensity factors influence each of those components. These ideas were validated by research led by the author at the Naval Academy with populations of midshipmen and Navy chaplains.

To make an ethical decision, an officer works through the steps in the process, going from moral awareness to moral action. In the first step, there is gut-level recognition that the situation is morally charged. Anger,

fear, and/or empathy are aroused. The decision-maker's gut is answering the question: "Is there something wrong here?" Is a person, community, or ideal at risk? Is there a dimension of right and wrong here, or are competing values at work?

Assuming that the situation raises an ethical issue, then the next step is to weigh various options. The aim is to distinguish right from wrong, better from worse, and between competing obligations. The decision-maker is also weighing possible actions. These kinds of questions may be asked: What action produces the most good and the least harm?

- What action respects everyone's rights and dignities?
- What action treats everyone equally—or if not equally, then at least proportionately and fairly? How would I want to be treated?



•What kind of person will I be if I act or do not act in this situation?


The next step is to decide what to do or not do. Sometimes choosing not to act is a valid decision. Deciding what to do also means marshaling the courage to act or not act, sometimes in the face of great opposition.

Sometimes, people can recognize an ethical dilemma, decide “the right thing to do,” resolve to act, and yet do not. The power of other people present is the most common explanation used for failing to act morally. In this last step, a person carries out his

or her decision, despite opposition or possible consequences.

This fairly straightforward process is somewhat complicated by factors that may increase the moral intensity of the situation. For example, how much someone is harmed or benefited by the decision-maker’s actions may influence the decision, as well as how much the social group agrees that a given action is good or bad. How close the decision-maker feels to the people affected by the decision and the probability that something harmful will occur can also color decision mak-

ing. The questions in the model probe whether one of these factors is unduly affecting the decision making.

A model like this one will help military personnel make ethical decisions in a practical, step-by-step way. Going through these steps gets easier with practice, until the process is second nature, part of the officer’s moral “muscle memory.” 

Dr. Elizabeth Holmes is Director of Assessment, Stockdale Center for Ethical Leadership, United States Naval Academy, Annapolis, MD.



BUILDING A SEA-BASED MEDICAL SUPPORT SYSTEM

PART II: Expeditionary Sealift

CAPT Arthur M. Smith, MC, USNR (Ret.)

Implementation of joint expeditionary operations, including seabasing, requires familiarity with those existing maritime assets dedicated to implementing and supporting these activities.

Forcible Entry Assets

Within the Navy are the vestigial remnants of the large World War II amphibious landing fleet designed to carry intact combat units—including their personnel, equipment, and cargo—and land them ashore in a ready-to-fight condition. The number of these amphibious ships, mostly developed during the Cold War, will ultimately number 31. (The exact number varies depending upon ship retirements and new vessel acquisitions.) At the close of 2006, they included:

•Eleven “big deck” amphibious ships including four remaining Tarawa class LHAs commissioned between 1976 and 1980. (These are to be serially retired and be replaced by LHA[R]s—incidentally, without well decks for surface access), and seven Wasp class LHDs. Located within these ships are medical casualty receiving and treatment facilities for immediate stabilizing treatment of the surviving wounded.

•Twelve relatively young Whidbey Island /Harpers Ferry dock landing ships (LSDs), and nine aging Austin Class LPD landing platform docks. (The latter two groups are to be sequentially replaced by nine new San Antonio Class LPD-17 ships.) Currently, one San Antonio class LPD is active.

The Navy organizes amphibious ships into expeditionary strike groups (ESGs). Each deployed ESG notionally includes one LHA or LHD, one LSD, and one LPD. The ships can carry a Marine expeditionary unit (MEU) consisting of 2,200 Marines, their aircraft, landing craft, combat equipment, and 15 days of supplies. Each ESG also notionally includes three surface combatants, a submarine, and a long range land-based maritime patrol aircraft. The ESG may deploy independently, or operate in conjunction with a carrier strike group.

Pre-Positioning Fleet

An additional component of joint maritime transportation assets for rapid reinforcement of forward based or deployed joint forces is a 36-ship pre-

positioning fleet, optimized for rapid response missions under conditions of assured access. All ships in the maritime prepositioning fleet operated by the Military Sealift Command (MSC) are manned by civilian contract mariners. They are responsive to the needs of regional combatant commanders for supplying combat support prior to strategic delivery of heavy equipment for lodgment development.

Supporting and supplementing existing Marine Corps amphibious combatant forces during expeditionary operations is the Maritime Pre-Positioning Force (MPF), consisting of 16 ships organized into 3 squadrons located in the Mediterranean, Diego Garcia, and Guam. Each squadron is pre-loaded with the equipment, supplies, ammunition, and fuel to support a single Marine expeditionary brigade in sustained combat for 30 days. With squadrons maintained in these strategic locations, MPF ships are within 10-14 days steaming time from any accessible port in Europe, the Indian Ocean, or the Western Pacific.

An additional group of supply vessels—the Combat Prepositioning Force (CPF)—consists of 10 ships pre-loaded with equipment, supplies, ammunition, and fuel for an Army “2x2” mechanized brigade (a brigade with two armored and two mechanized infantry battalions, an artillery battalion, an engineer battalion, a combat support battalion, and a theater army logistics package for supporting heavy Army forces until a theater logistics infrastructure can be developed). The CPF, consisting of eight large, medium speed, roll-on/roll-off (RO/RO) ships (LMSRs) and two container ships filled with ammunition are stationed in the Arabian Sea and Indian Ocean.

A third group, the Logistics Prepositioning Force (LPF), consists of 10 ships stationed at Diego Garcia. Two are tankers converted by the Defense Logistics Agency (DLA) into offshore

petroleum distribution platforms, i.e. sea-based “fuel farms.” Four ships carry weapons and supplies to support U.S. Air Force operations; one logistics ship carries Navy ordnance. Three additional ships support the Marine Corps: two aviation logistics ships (T-AVB), each carrying an intermediate maintenance activity for a Marine expeditionary brigade’s aviation squadrons, are berthed on the East and West Coasts of the United States. The third ship, a high speed transport, supports Marine units based in Okinawa.

Surge Sealift Fleet (SSF)

Another component of the Sea-Based Transport Fleet, the 19-ship MSC operated Surge Sealift Fleet (SSF), is optimized for rapid transoceanic transport of joint ground combat equipment from CONUS. Among the world’s fastest ocean going cargo ships, they are maintained in US ports at a high state of readiness with activation times of 96 hours or less. They are designed to load and transport mechanized and armored combat units. These eight former high speed merchant ships, capable of steaming at speeds in excess of 30 knots, can lift nearly all the equipment associated with a legacy Army mechanized division. The remainder of the SSF consists of 11 LMSRs—the most capable RO/RO ships in the world with large capacity.

Ready Reserve Fleet (and others)

The combined 90-ship sea-based transport fleet is further supported by a 58-ship Ready Reserve Fleet (RRF)

optimized to provide essential logistical support for all joint power expeditionary power projection operations. These vessels, maintained in reduced operating status (ROS) in US ports, can be activated in 4,5,10, or 20 days. They include government owned tankers, auxiliary crane ships, RO/RO ships, heavy lift ships, lighter-aboard ships, and modular cargo delivery system ships. Because of their configuration, these ships are especially suitable for transporting and off-loading bulky, oversized military equipment.

Current fleet medical resources for advanced treatment of the sick and injured, beyond that provided aboard the LHA/LHD craft, are two T-AH hospital ships maintained by the MSC. Although well equipped and capable of advanced casualty care when adequately staffed with medical augmentees, they are fading into operational obsolescence due to age, slow speed, and deep drafts which limit their availability within littoral waters.



Large Medium Speed Roll On/Roll Off (LMSR) unloading in port.
Official Navy photo

Traditional Sealift Limitations

All Prepositioning and Surge Sealift ships require a deepwater port or anchorage to discharge their cargoes, and are optimized for pier-side unloading using their roll on/roll off ramps. While they all have cranes and could potentially off-load some cargoes “in stream” in calm seas—up to 4 miles from shore in a protected environment—albeit at much slower rates than is possible pier-side, this pace is considered impractical.

In the context of contemporary operations, military personnel tasked with operational utilization of the equipment carried by the MPF, CPF, and Surge Sealift Fleet, must be flown to a nearby airfield to “marry up” with the equipment and prepare for combat. In essence, expeditionary forces which use the equipment carried aboard these ships are not “ready to fight” when transported to a distant theater. Following their reception, they and their equipment must be prepared and staged, then moved to the forward operational area and integrated with allied forces.

Missions for the Future

It is assumed that distributed sea-based and networked expeditionary forces will be capable of countering anti-access and irregular warfare challenges in the littorals, will be less vulnerable, and require less force protection. Nevertheless, it cannot be ignored that the availability of inexpensive advanced weapons and sensors to potential worldwide adversaries has increased the risks associated with traditional methods of ship-to-shore movement. Ample deference must be given to the 250-nautical-mile range of contemporary “surface-hugging” anti-ship cruise missiles, as well as to the shallow and deep-water capabilities of mines (in modern designs, these being integrated systems incorporating state-of-the-art sensors and processors) that can further complicate counter-mine operations.

Furthermore, one would expect that an enemy’s precision sensors and weapons utilizing speed, stealth, maneuverability, background clutter, and surprise will be subsequently directed at the big, slow ships of the afloat sustainment base. Many of these ships do not have hulls built to combat standards, and are generally described as “access-sensitive vessels.” Such ships invariably have little time to defend themselves against weapons employed at the shorter ranges likely in the littoral. This was exemplified during the Falklands military campaign by the sinking, via an errant Argentine Exocet missile, of the unarmed but strategically important British support transport, *MV Atlantic Conveyor*, while transporting tactical helicopters to combat forces of the United Kingdom.

Unfortunately, due to traditional limitations in cargo space, cargo hold configuration, and shipboard cargo handling equipment, today’s existing “forcible entry” capable amphibious forces are not well suited to act as at-sea logistics bases, and require that logistics bases be established ashore to support the ground force. Likewise, none of the Navy’s Maritime Pre-Positioned Force vessels are capable of sustained “in stream” logistical support. They are heavily dependent upon the availability of deepwater ports and airfields in forward theaters for offloading and distribution of their essential cargoes.

In the future, it is hoped to accommodate sea-based activities at a minimum of 25 nautical miles off-shore, and to logistically support afloat components of future distributed sea bases directly, as well as forces inserted ashore, thereby obviating the need to create vast and vulnerable “iron mountains” of supplies ashore. This requires ships capable of “in-stream” selective offload of equipment and supplies. Consequently, a different approach will be needed in the future to field this new sea-basing capability.

From the Navy/Marine Corps perspective, sea-basing plans have centered upon development of an innovative Maritime Prepositioning Force (Future) or MPF(F) squadron, to replace one of the three existing MPF squadrons positioned in a selected critical location of the world and available for contingencies.

As currently envisioned, the squadron configuration for the MPF(F), will consist of 14 ships: 12 new construction ships, some with the capability for in-stream selective offload of supplies and equipment, and two existing MPF ships (called “dense packed”). The 12 new-construction ships will consist of: two T-LHA-(R)s equipped with Marine Expeditionary Brigade (MEB) command and control facilities; one T-LHD equipped with aviation C2 facilities; three modified large, medium-speed, roll-on/roll-off(LMSR) sealift ships; three modified Lewis and Clark (TAKE-1) class cargo and ammunition re-supply ships; and three mobile landing platform(MLP) type vessels capable of housing as many as 1,100 troops each.

To facilitate meeting surface assault requirements without external or aviation support, the MLPs should be able to partially submerge in water and allow cargo to float on and off into watercraft delivery vehicles through expanded surface interface points. While the Navy/Marine Corps’ MPF(F) ships will generally remain in reduced operating status under the aegis of the Military Sealift Command, they will be maintained by civilian mariner crews. Since the T-LHA and T-LHD platforms will be conducting forcible entry and belligerent operations when activated, they will inevitably require re-classification as warships and augmentation by a Navy crew.

Despite the advantages of remaining far offshore, often “over the horizon,” as well as having networked defenses such as surface combatants, submarines and aircraft, the sea bases

may still be vulnerable. A single missile hit could render a significant fraction of a base's capability inoperable, especially if involving those sea-based ships built only to "commercial" viability standards. Vessels such as the T-AKRs, T-AKEs, and mobile landing platforms would be especially vulnerable, for in comparison with vessels built to naval standards, these ships typically have less compartmentalization to limit the amount of water that can enter the hull from any single hit. They also have fewer redundant systems and fewer robust damage control capabilities. Furthermore, they are not equipped with self-defense weapons such as the Rolling Airframe Missile or the Close-In Weapon System, to provide a final layer of defense against missile attacks.

Geographic Impediments to Access

Geographic constraints may have a substantial impact upon sea-based operations, and to casualty retrieval and treatment activities as well. Short-range Navy fighters can achieve nearly global reach by having access to aircraft carrier "bases" that can be located around the world. Because sea bases are limited to major bodies of littoral water contiguous to the world's oceans, however, there are practical limits to the inland reach of systems for airborne logistical support of air or surface inserted forces, notwithstanding retrograde medical evacuation of combat casualties to casualty receiving and treatment components of sea bases.

The length of geographic "reach" offered by expeditionary systems stems from two primary factors: the flexibility to establish bases of operation where they are needed around the world, and the feasible "radius of operation" from those bases. When such bases are located at sea, the issues related to access assume greater complexity. Although sea bases might have access to the approximately 70 percent of the earth's surface that is

ocean, ground forces employed or sustained by them have access only to land areas within range of their ship-to-shore aircraft.

The desire to operate in regions of great population density provides a sobering perspective on the effective reach of sea-based ground forces. Military forces are most commonly needed in regions with greater concentrations of people, since such areas are more likely to experience political instability. In the event of a conflict, such areas are more likely to have the economic resources to field opposing military forces of sufficient strength to require the commitment of substantial contingency U.S. military forces for forcible entry, and for their protection.

Operating under the theoretical assumption that naval forces will provide complete protection, sea-based forces could be positioned in the littorals close to any land area of operations with proximity to the sea. From that location, ground forces could be sent directly "over the beach" by short range systems such as landing craft, helicopters, and other rotary aircraft, and sustained in a like fashion with little or no logistics on the ground. Nevertheless, the difficulty of preventing or rapidly detecting the laying of mines, or of not being capable of clearing them in waters covered by a coastal defense system, will ultimately oblige task force ships and their contained medical facilities to move seaward.

Various sea-basing scenarios have been structured to define the nature of support requirements for operations with flight distances ranging from 110-220 nautical miles from the launching ships. In practice, the actual inland reach for sea-based aircraft, including attack, logistical, and medical evacuation flights, might be considerably shorter for several reasons. First, the ships in a sea base would be expected to remain "over the horizon" at least 25 nautical miles offshore to make them more difficult to detect

and attack. Second, the sea-based ships cannot always be positioned perpendicularly offshore (for the shortest distance) from supported ground units. Third, once over land, aircraft are likely to fly evasive flight paths to make it more difficult for an adversary to position defenses along their routes.

Increases of roughly 30 percent in flight distances can be expected if efforts must be made to avoid air defenses. Those considerations could reduce the effective operational reach inland to as little as 60 nautical miles for current aircraft and about 130 nautical miles for the planned longer-range heavy-lift rotorcraft. High terrain in the vicinity of the coast could further limit operations because the performance of rotorcraft decreases with increasing altitude. (For example, many parts of Iran are mountainous. Nearly 40 percent of Iran's land area and almost half its population are at elevations greater than 5,000 feet above sea level, thus presenting limitations to rotary and fixed wing flight operations.)

As subsequent discussion sections will demonstrate, the implications of these latter realities will have a major impact upon casualty retrieval and survival, most especially the factor of time expended between injury and arrival at a sea base facility where life saving interventions can be performed.✂

CAPT Smith is Adjunct Professor of Military and Emergency Medicine, and Adjunct Professor of Surgery at the Uniformed Services University of the Health Sciences, Bethesda, MD, and Professor of Surgery (Urology) at the Medical College of Georgia.

In Memoriam

RADM Francis John Fabrizio, DC, RUSNR, a titan in Navy dentistry who was senior to the staff corps he served in, passed away on 19 December 2007. He was 96.

Dr. Fabrizio was born in Washington, DC, on 7 July 1911. He received his D.D.S. from Georgetown University in 1935, when Dr. William Cogan (1856-1944), retired pioneer Navy dentist, and former dean of Georgetown School of Dentistry, was then serving as a volunteer administrative officer. Years later when talking about his schooling, Fabrizio remembered an elderly Dr. Cogan conducting a daily attendance of students on a wooden clipboard. In 1935, just months after graduating, and 23 years after Dean Cogan made history as the Navy's first active duty dentist, Fabrizio visited the Bureau of Medicine and Surgery (then located in temporary Navy buildings on Constitution Avenue) to investigate career opportunities. There he met with Chief of the Dental Corps, Harry E. Harvey, who Fabrizio later recalled was a highly personable man. In fact, following the meeting, Harvey personally drove the young man home. This act of kindness went a long way with Dr. Fabrizio.

In August 1935, Fabrizio sought and obtained his commission in the Dental Corps Reserve as a lieutenant junior grade. During the following years he would serve with the 5th Battalion,

Marine Corps Reserve, in Quantico, VA, the Naval Receiving Station, Anacostia, Washington, DC, and, during World War II, at the Naval Air Technical Training Center in Jacksonville, FL.

Dental Corps ROTC Program

The Korean War put a heavy load on the Navy's Dental Corps. At the start of the war in 1950, 889 dental officers were on duty. By the close of war, this number had expanded to 1,886, of which 40 percent were reservists. During this time, the Navy instituted a pilot program—a Dental Corps Reserve unit at Georgetown University, Washington, DC. This unit was to prepare reserve officers for active duty.

On 1 March 1951, Fabrizio took command of the newly formed Naval Reserve Dentistry Company (NAVRES-DENTCO) 5-8. NAVRES-DENTCO 5-8 served as the prototype for some 27 similar companies that would spring up at dental schools throughout the nation. This unit was the first Naval Reserve Unit to be composed of dental students commissioned as ensign. It would ultimately serve as an embarkation point from where many graduating officers would launch careers as senior officers of the Dental Corps.

In addition to his commanding officer duties at Georgetown, Dr. Fabrizio, supported by Navy dentists Drs. Albert G. Paulsen (later RADM) and Anthony P. Culotta (later CAPT), recruited students for the company and oversaw its organization and administration. Their

effort was not without success. Within the first 4 years of the company's existence, annual membership increased from 11 to 40 students. During those first 4 years, 129 prospective military dentists were enrolled as students.

Throughout the 1950s and '60s, Dr. Fabrizio also remained active in the Naval Residency Program in Periodontology, at the U. S. Naval Dental School, Bethesda, MD.

In July 1960, Dr. Fabrizio was promoted to captain and in February 1966, to rear admiral. In a speech entitled, "Duties of Reserve Flag Dental Officer," just prior to his retirement in 1971, RADM Fabrizio pronounced, "The reservist have established an enviable record in the history of our great country. With the responsibility of this heritage, it is up to us to go forward with an even deeper sense of dedication and pride and maintain the Naval Reserve Dental Corps at the top where it rightfully belongs."

In addition to his dedicated served in the Navy Dental Corps, and as a leader who helped develop the innovative dental ROTC program, RADM Fabrizio will be remembered for his contributions to many dental and medical societies. These included the International College of Dentists where he was a fellow, the American Board of Periodontology, the American College of Dentists, the American Academy of Periodontology, the American Association of Dental Editors, the District of Columbia Dental Society, and the Pan American Medical Society.



CAPT Claude Cage Atkins, MC, USN (Ret.), died 26 December 2007 in San Diego, CA. He was 75.

Born on 19 September 1932, in Corpus Christi, TX, Dr. Atkins was raised by an aunt and uncle in Blanco, TX, after the deaths of his parents.

Dr. Atkins attended the University of Texas and received his medical degree

from the Baylor University College of Medicine. A career Navy surgeon, he served two tours in Vietnam. There, he was awarded the Navy and Marine Corps Medal for heroism and the Bronze Star with Combat Distinguishing Device.

Dr. Atkins served as the Chairman of the Department of Surgery and Director

of Clinical Services (Chief of Medical Staff) at the Naval Regional Medical Center in San Diego, CA. He also served as the Chief of Surgery at the National Naval Medical Center, Bethesda, MD, and as Commanding Officer of Naval Hospital Charleston, SC.

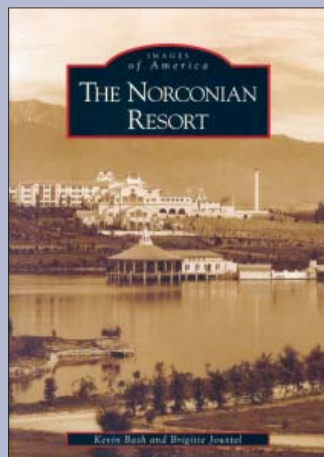
Book Review

***The Norconian Resort* by Kevin Bash and Brigitte Jouxte. Arcadia Publishing, Mt. Pleasant, SC. 2007. 127 pages.**

Naval Hospital Corona was not the typical World War II hospital. Formerly known as the “Norconian,” it was once a dream hotel/resort turned reality by entrepreneur Rex Clark. The Norconian was a sort of San Simeon where the beautiful and elite came to play. Architecturally, it offered guests a festival of wrought iron, art deco, and Spanish elements complete with resplendent pillars, marble floors, and lavish Heinsbergen murals. Guests could stay in one of the luxurious 250 bedrooms, and access Louis IV-inspired lounges, dining rooms, bath houses, and Olympic sized pools. However, like the Xanadu of *Citizen Kane*, all this would end in a gothic neglect.


In *The Norconian Resort*, authors Kevin Bash and Brigitte Jouxte succeed in bringing the old resort back to life. Their 127-page book is a scrapbook of historical and present-day photographs (some 231) captioned and complemented with many anecdotes. Bash and Jouxte tell us of Mack Sennett’s “bathing beauties” enlivening resort parties; of Johnny Weismuller (Tarzan) and Buster Crabbe (Flash Gordon) putting on a diving demonstration between martinis; and Walt Disney hosting a “thank you” party for all the crew of *Snow White*. As Bash and Jouxte relate, “That Norconian weekend has become the stuff of legend, and according to one attendee, Disney was so mortified at his employees’ shenanigans that, for years after, if you dared mention the event in Walt’s presence, you would be fired immediately.”

Hit hard by the “Great Depression,” the golden age of the resort ended in the late 1930s. In 1941, by order of President Roosevelt, the facility was purchased for use as a naval hospital. Indoor spas that once pampered Hollywood’s elite were now used as “hydrotherapy treatment centers” for sailors and Marines, and luxurious bedrooms were now saved for the many thousands of war wounded. Tea time and “happy hours” of old were replaced with occupational therapy schedules. The hospital boasted a carpentry shop, an art studio, and a “toy factory” where men, physically and psychologically damaged by the war, could repair their weary minds and bodies through craft. The naval hospital also had served as a stage from which Dr. Gerald Gray pioneered “wheelchair basketball.”



Naval Hospital Corona proved to be a rarity in that it had a Hollywood star as a chairman of its Naval Aid Auxiliary Hospital Visiting Committee. Kay Francis, once the most highly paid star in Hollywood, headed this cultural affairs committee. Every Thursday, Francis would bring “friends” such as Humphrey Bogart, James Cagney, Claudette Colbert,

Cary Grant, Red Skelton, and others to the hospital to meet with patients. And thanks to her connections, the hospital hosted numerous radio programs, big band concerts, and USO shows.

The Navy Medical Department’s use of the Norconian resort officially ended in 1957. Afterward, the state of California took over the campus, using it as a rehabilitation center and a medium security prison. In 2002, the old resort and hospital buildings were abandoned, sealed up, and left to die from the inside out. Bash and Jouxte have captured a fascinating, albeit forgotten, history for the reader. Hopefully, their book will be the stepping stone to the restoration and preservation of an American treasure.—ABS 

One could say that rescuing the history of the Norconian from oblivion has been a family affair for the authors. In addition to writing *The Norconian Resort*, husband and wife Kevin Bash and Brigitte Jouxte, are involved in the Lake Norconian Club Preservation Society whose mission is to preserve “the rich architecture and the almost 80 years of history represented by some of the finest buildings ever constructed on the West Coast.” Their daughter, Angelique Bash recently produced a documentary film entitled *Triumph and Tragedy - the Rise and Fall of the Norconian Resort* Supreme which was a History Channel High School Documentary Award winner. To view her documentary and find out more about the Norconian, see the website: <http://www.lakenorconianclub.org>

Navy Medicine 1944



U.S. Naval Base Hospital New Guinea: ENS Georgia Jones, NC, pursues her off-duty hobby—collecting tropical moths.

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